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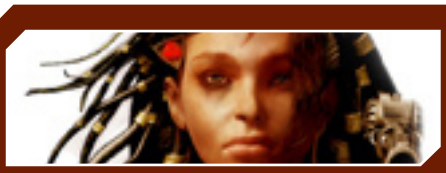
>>Exclusive interview with Team 17, looking over the 'genre-busting' classic Lemmings and the latest PSP remake

LIGHTING & RENDERING CARS
>>Courtesy of mymentalray.com, Neville Dsouza shows us how it's done

INTERVIEWS
>>with Patrick Beaulieu, Manuel Macha & Shilo Design

MAKING OF'S
>>'Mazinger Z', 'Jungle Mecha', 'Smoking Creature' & 'Thinker'.

GALLERIES
>>from Alexandr Melentiev, Petra Stefankova, Fabrice Delage, Denisa Mrackova & more!





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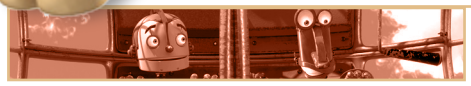
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Welcome

Well, it's December again and a lot of the planet is gearing up for the holidays. We will still be working away here to make sure that you have a brand new and improved magazine for the new year. We have a list of quality tutorials, articles and interviews next year which will blow your little Christmas stockings off! Also, as of the 2007 'era', we will have a magazine full of new features behind the scenes. A vastly improved subscription and automation system will replace (the frankly old) existing one. This should make purchasing and downloading easier than ever! The content will also have new features. We will be occasionally adding video into the mag, plus real 3D Objects before your very eyes to be turned and viewed at your discretion! Thanks for continuing to support us and we hope the improvements will only add to what we consider to be a rather good magazine... If we do say so ourselves ;-). Ed.

Techniques and Tutorials

For those of you following any of our five SwordMaster tutorials, you may or may not be happy to know that this is the final part. Well done to those of you who have made it this far! Don't forget that we would love to see your finished textured models, and also listen to any constructive criticism/praise/suggestions that you may have for us. Also this month; lighting and rendering cars using Mental Ray. Every month we receive a whole heap of very good car images, some of which just need a finishing touch, so hopefully this month will help. Also, as an early present, we have 4 Making Of's for you. 'Mazinger Z' by Angel Nieves, 'Jungle Mecha' by Jeremiah Strong, 'Smoking Creature' by Marco Menco and 'Thinker' by Marcin Solarz, all complete the 'learning line-up' for this month.

Inspiration

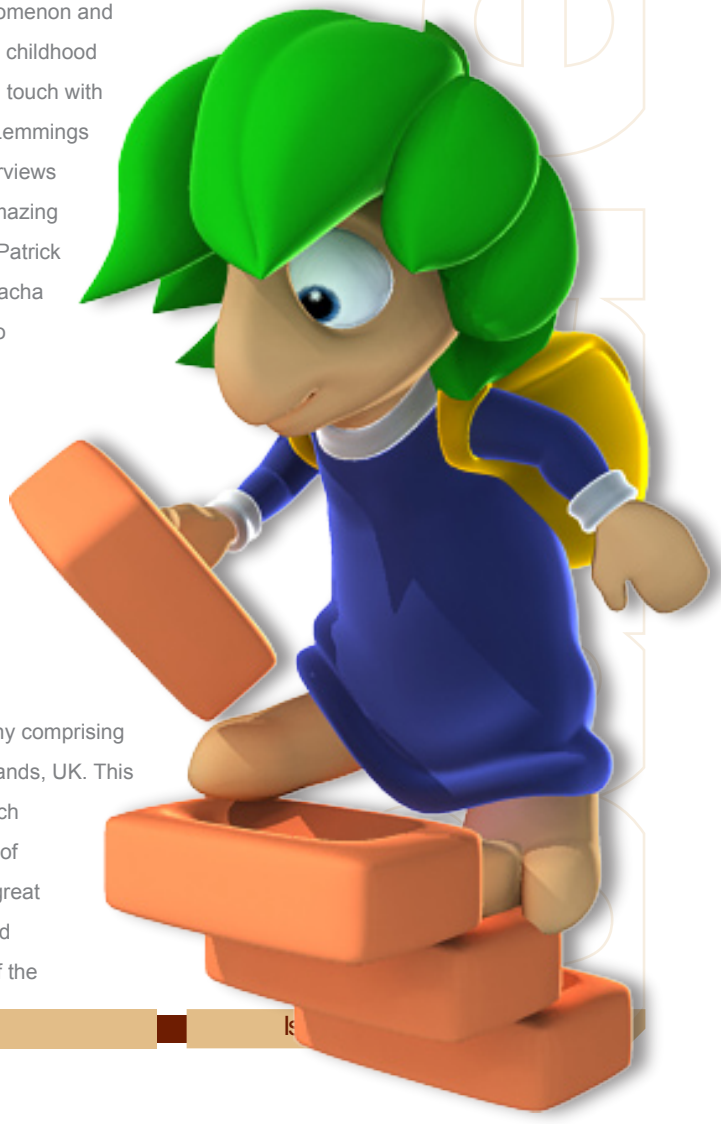
We have been invaded by Lemmings... Remembering that early Christmas morning, many years ago, when I discovered a shiny new Commodore Amiga 500 boxed in my living room, we could not help but discuss the 'genre-busting' Lemmings phenomenon and how it wasted so many precious childhood hours (the good kind). We got in touch with Team17 who have remade the Lemmings for PSP to talk all about it... Interviews this month also feature some amazing artists: cartoon character 'King' Patrick Beaulieu, Lucasfilm's Manuel Macha and Emmy award-winning studio Shilo Design.

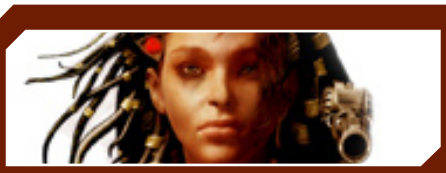
Holidays

Whatever you may be up to at this time of year, sit back and enjoy this issue and we hope to see you in the new year...

About us

Zoo Publishing is a new company comprising of a small team here in the Midlands, UK. This magazine is our first project which we are hoping, with the support of the community, will build into a great resource and a highly anticipated monthly release. The 'support of the community' is an interesting point, where a 'magazine for 3D artists' is not an original idea, but the marketing and distribution of this magazine, as far as we know, is a first. It follows the principle of traditional magazines that are sold on news stands and in many outlets, but being a digital downloadable mag the many established web communities on the net are our outlets and news-stands. 3DCreative is supported by 1DCafe, 3DKingdom, 3DLinks, 3dm3, 3DPalace, 3DResources, 3DTotal, 3DTutorials.sk, 3DValley, 123d, Ambiguous Arts, CGArena, CGChannel, CGDirectory, CGEmpire, CGFocus, CGUnderground, Childplay Studios, Daz3D, Deathfall, Digital Tutors, Kurv Studios, Max-realms, Mediaworks, Rendezvous3D, Spinquad, Subdivision, The3dstudio, TheBest3D, Treddi, Vocanson & Vanishingpoint. We look forward to lasting and successful partnerships with these CG community sites.







Luciano Iurino

I started back in 1994 with 3DStudio on MS-Dos as Modeller/ Texture Artist. In 2001, I co-founded PM Studios and I still work for it as the Lead 3D Artist. Recently we have developed the videogame “ETROM – The Astral Essence”. I also work as a freelancer for different magazines, web-portals, gfx and videogame companies. Recently I left the 3DS Max environment to move on to XSI.

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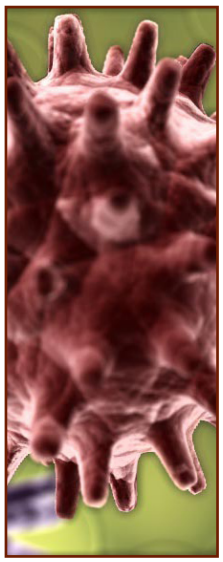
Sunmaster



Vojislav Milanovic

3D Modeller, Animator and VFX Compositor, Anigraph Studio, self-taught all-round 3D-guy, started to doodle around in 3D about 8 years ago. In the last 5 years I have done a lot of various things from print and TV ads to gaming and movie graphics and am currently involved in multimedia study and character developing for an animated feature movie. One of my goals is to make my own animated movie.

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Taylor Kingston



3D Artist > Digital Illusions (DICE). Started out with 3D on Studio Max; self-taught through high school, going to Sheridan College to study traditional art and Seneca College for Computer Animation, where I switched over to Maya. Hoping to one day break into film, perhaps even getting into the directing side one day.

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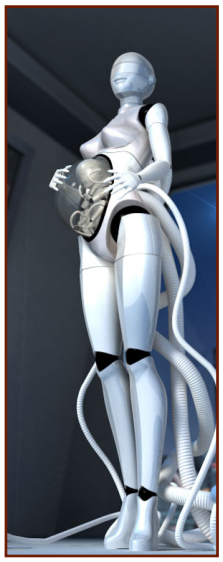
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Niki Bartucci

Freelance 3D Modeller, Italy. Started working in the field of Computer Graphics in 2000 as an illustrator and web designer. In 2003, I started using 3D software, such as C4D and later 3DS Max. That year, I worked on ETROM - The Astral Essence, RPG video-game for PC, developed by PMstudios. Currently I’m a freelancer and specialise in commercials. I especially like RPG & RTS video-games.

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Giuseppe Guglielmucci



Freelance 3D Modeller/Animator. I began to use computers with the epoch of the vic20 and Cinema4D was my 1st 3D software. I started working in the field of CG in 1999, in commercial design. In 2003, I worked on ETROM - The Astral Essence, RPG video-game for PC, developed by PMstudios. Currently I’m hoping to work in the video-games industry and develop my own game.

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Contributing Artists This Months



Angel Nieves

3D Modeller/Texture Artist. Started by incorporating 3D art into my graphic design work. Soon after I started to do 3D full time. Since then I've worked in the broadcast, film and game industries. Recently I completed work on "Lightwave 3D 9 Texturing", published by Wordware. Now working as an Environment Artist at Hi-Rez Studios in Atlanta, GA.

angeln@vertexangel.com

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Marco Menco



3D Artist > Student/ Freelancer, Italy. Started in 2003 with XSI at the Academy of Fine Arts. I continued studying and working to improve my skills in computer graphics. Now I also use Z-Brush, Maya, Modo & Mudbox. Preparing my thesis on CG and working as a 3D illustrator and modeler. My goal is to work for the movie and video game industry.

drummermenco@yahoo.it

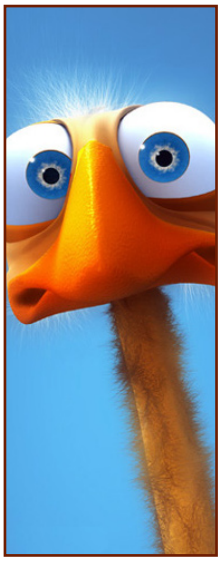
http://drummer.cgsociety.org/gallery/



Patrick Beaulieu

Born Quebec, Canada, in 1981. I have always been interested in art, so I decided to get a 3D qualification here in Quebec city in 1999, at the Institute Athena. At school, I discovered animation and decided to invest my time in this and cartoon design. I'm currently working at Ubisoft as Lead Animator. In my spare time, I like to create characters and animations. squeezestudio@hotmail.com

www.squeezestudio.com





Neville Dsouza



Neville Dsouza is an active member of mymentalray. com where he gets to share his mental ray knowledge with other high-end colleagues. Committed 3DS Max artist, with over 6 years of experience, working as a graphic artist. Most of his time is spent in the area of concept car design and rendering. "Its one hell of a joyride! I enjoy it immensely!"

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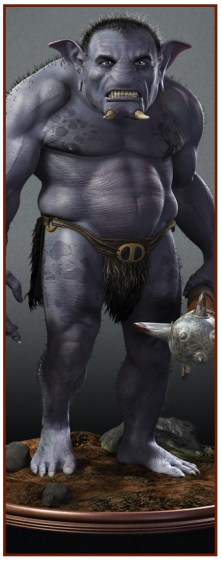
Marcin Solarz

3D Artist, Kraków, Poland. I began in CG in 2000 as a Commercial 2D Graphic Artist. I later started using 3DS Max and XSI. A group of friends and myself developed our own game called 'Soul Quest' (revoltage.pl) in 2003. I work as a Modeller, Texture Artist, Rigger, Animator & Environment Artist. We are currently looking for a Publisher.

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marcinek.cgsociety.org/gallery/





Nicolas Collings



Character Modeller. Graduated in July 2005, and have since worked on a TV Series for French television, as well as a short film. I'm really passionate about character modelling, especially realistic stuff and I'd like to develop my career orientation by entering the video game industry.

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http://sillord.free.fr

totalTextures

v4: r2

Humans & Creatures

The Original Total Texture collection was created in 2001, utilising the best methods and technology of the time. Since then, techniques and technology have both moved forward, and here at 3DTotal we felt that although the original collection is still widely used and highly regarded among artists and studios of all calibers, it was time for an update...

This enormously improved version of the original texture collection now contains 272 individual Materials, comprising of over 938 individual, hand crafted texture maps. Every Texture now has its own unique colour map, bump map. There is also over 50 new alpha and 100 new specular maps.

What's new?
This new collection consists of 272 materials, comprising of 938 individual maps!! (Colour, Bump, Specular and Alpha maps). We have also included 36 psd files for some of the textures, allowing you to customize some new textures of your own.

DVD Contents:
31 Creature Eyes
11 Creature Furs
2 Creature Miscellaneous
6 Creature Scales
14 Creature Skin (Body)
27 Creature Skin (Facial)
16 www.3d.sk images
16 Human Eyes
2 Human Hair
12 Human Misc (Body)
24 Human Misc (Facial)
47 Human Skin (Abnormal)
2 Human Skin (Old)
13 Human Skin (Tatoo)
34 Human Skin (Young)
15 Human Skin (Reference)



15 Collections of amazing Textures

for full information and pricing including discounts of up to 25% visit www.3dtotal.com
Existing v4 owners can get the new upgrade for only $29 usd!

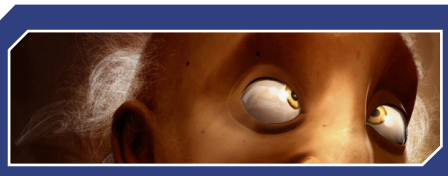
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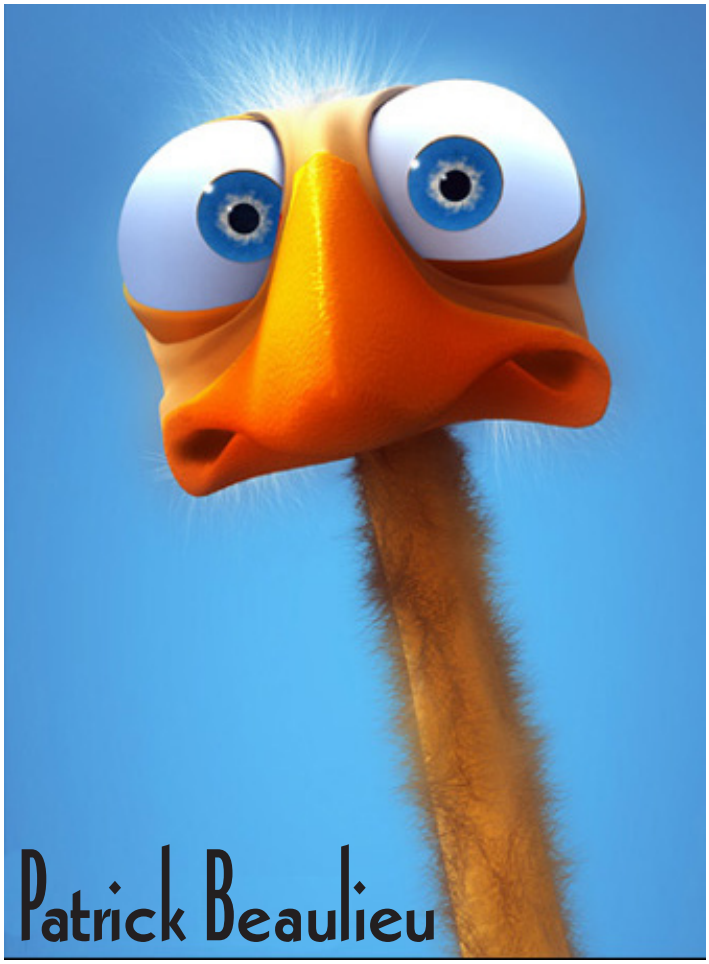


An Interview with:

Patrick Beaulieu

From making stop-motion videos using his Teenage Mutant Hero Turtles and his father's camera, to creating fantastic and hilarious characters in the most modern ways - this interview gives a glimpse in the life of Patrick and his amazing cartoon characters...







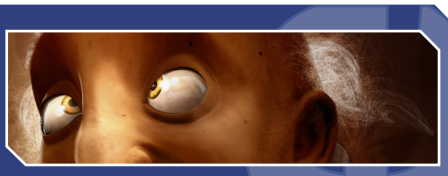
Hello Patrick, could you tell us what it was about art that captivated you at such a young age?

I have always loved drawing since I was young; I was drawing Mario Bros for all my friends, and I loved working on 'arty' stuff. When my father bought a VHS camera (when VHS was still trendy) and I realised that I could make stop-motion, I immediately started to get into recording stop-motion with my Teenage Mutant Hero Turtles by making them fight! Man, watching these characters move was so cool! I really loved the whole experience. Later, I didn't know what career path to follow and, after a year wasted in Human Sciences, I decided to get back to my passion: drawing. It was the best decision of my life! What better job can I get? Making characters move is so cool! I never thought I could get a job which would bring me so much in all its aspects. I love my work - it really is a passion.



When you first started out, did you ever expect to be working for one of the leading games companies around today?

Well, my progression in this area was never planned since I learned 3D in 1999-2000 and worked in the video games, television and cinema industries. I never had a goal as such, but the only one I did have was to learn various things by working on interesting projects with a good team. Working at Ubisoft was a real change in my career. I worked two years in Les Laurentides (north of Montréal) in the movie industry. During my second year at Hybride, I



heard about Ubisoft coming to Québec. It was a good opportunity for me to go back there and work for a major company. Now, looking back at it all, I am very glad to have worked in all these areas and I'm happy to work at Ubisoft.



Having worked on a host of films, how would you compare working in the games industry to working on feature films?

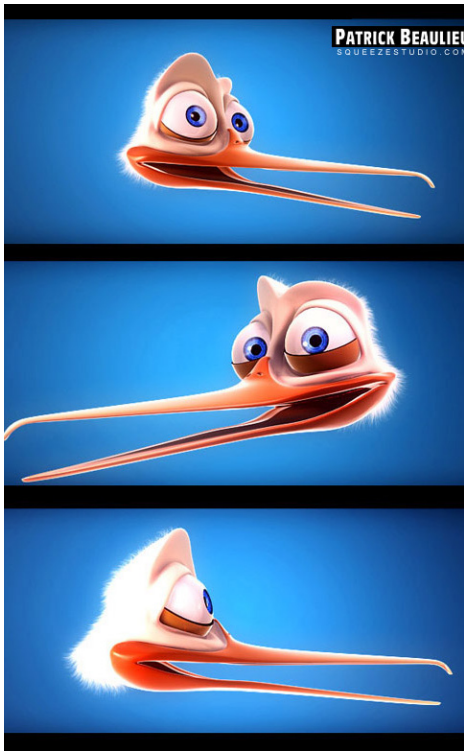
It is completely different. In the cinema industry, deadlines are reasonable for you to complete an animation, quality is the most important aspect and critics can be very harsh! It was in that industry that I learned how to use the best of my skills in making animations and to enhance them to the best of my ability. In the games industry, deadlines are much tighter and the quality is less important in video games, however it is interesting to make such animations. It is hard to compare: in video games we usually work on cycles and on-the-spot animations, whereas in films each shot is completely different. At the moment, I am lead animator and I have new challenges - making a project based on our game with great animations

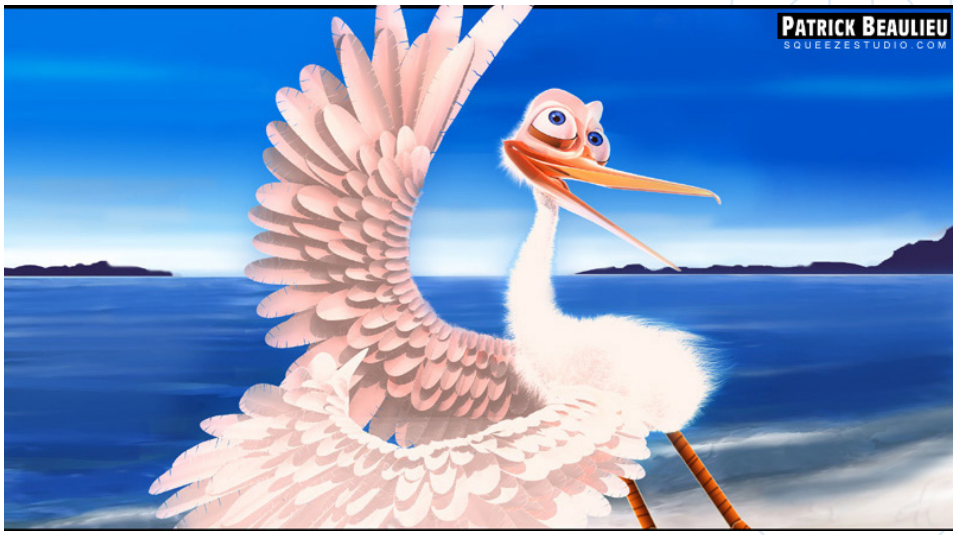








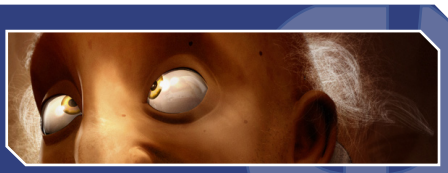




- supervising what is being made, finding new ways, or techniques, of working, deciding on a good production pipeline… and, of course, animate and evolve in animation!

Do you find it easier to animate a character in a game than to animate one in a feature film?

It is definitely easier in video games, as the challenge is quite different to those in the cinema industry, where animations are often more complex and require a lot of research. Films require perfection, whereas in video games delays are so short to animate that quality becomes less interesting. Animations in video games are also often cyclic movements (loops), whereas in cinema everything is possible: there are no limits! It's important to respect the constraints and make more with less, which is not always an easy thing to do but can be very challenging... It's two different worlds.













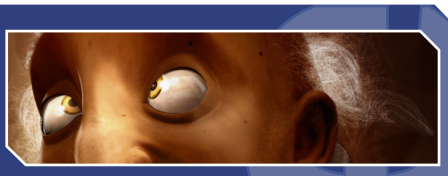
In working for Ubisoft, being a 3D teacher and being a proud new father, where do you find the time to fit in the creation of all these characters?

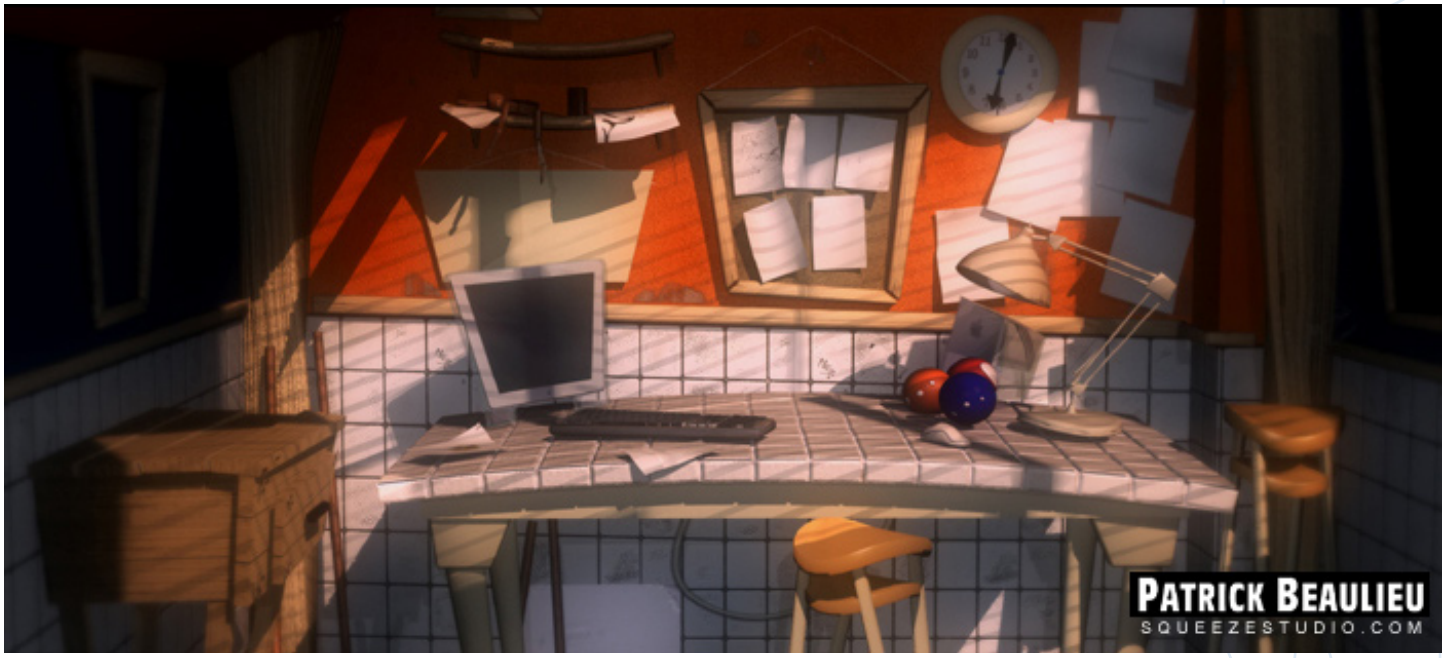
I have become a father recently - 6 weeks to be precise - and everything is fine! I love my new life with my little family and this little girl in my life. Working at Ubisoft and teaching animation are more time consuming than my family life. It's a fact that I have a lot less spare time than before, as my two jobs and family life keep me very busy during the week. When it is a bit more relaxed at work and at school, with lectures, I have a fresh mind and time to work on personal projects. Since I used to spend quite some time on my personal projects over previous years, it is hard for me to slow down on producing personal projects now. I still want to work and I have loads of ideas and projects in mind. All I need is the time and it is all a matter of planning and setting my priorities. Anyway, creating a character is not very long - the hardest part is to find the right idea. Once everything is settled and clear, only a few days are needed to complete the project. So, whenever I have time to spend on my projects, I just go for it!

What are your main influences when creating your characters?

I have various influences from everything that surrounds me in everyday life. My latest character, FERN, is based on a man who lives close to Ubisoft. Seeing him every morning, I decided to make my own version! It is a fact that the cartoonish style that I have developed was inspired by films from Pixar or Pdi, as well as others - I can't do without it. I love the style: characters are expressive, and the design is simple yet perfect. Everyone loves these characters, and they are the kind that inspire


PATRICK BEAULIEU
SQUEEZESTUDIO





me, or at least the type of quality I would like to achieve in my own character design work. The Internet is also full of resources for artists, with many forums and galleries, which is beneficial for us all, enforcing us to move forward and to find new styles and subjects to explore.

Do you think there will be any Emy characters being produced to add to your portfolio, as babies have a variety of facial expressions which could lend themselves very well to this genre?

He he he... It's a very good idea! It is of course something I often consider when I am with my daughter. I often want to model her in 3D and make a character based on her, in her honour. I am still undecided on this, plus I have never animated a child in 3D so it should be fun to try, no doubt about it! When I see what has been done with Boo in 'Monsters Inc.', I really want to have a go at modelling my little girl!

With a wealth of characters at your disposal, have you ever played with the idea of creating an animated movie with them?

Doing something with all these characters has always been in my mind. The only problem is that I still have plenty of ideas that I want to explore, and my style is constantly evolving. I haven't reached the level of quality that I would like, so I want to continue working towards this. On the other hand, a melting pot of all my characters and a believable story with a bear, an ostrich, a chicken and an old man, could surely prove difficult to make. I think I'd rather continue what I am doing and create new characters for the time being. There is nothing more rewarding that animating and bringing a character to life - wow! When I make a new character I am on a high for at least 2 weeks! I get up feeling inspired every morning, and I have only this on my mind. It is really inspiring to work when you have an idea that you like and want to develop further.







I believe I have achieved the best out of my characters until now. I have won some contests and have been published in magazines with some of them. That's what keeps me going - creating new things - trying to do better than in the past and to get positive feedback on my new characters. But who knows? In a few years I might want to use all these characters and bring them all to life. We just never know...

Could you tell us how SqueezeStudio came about?

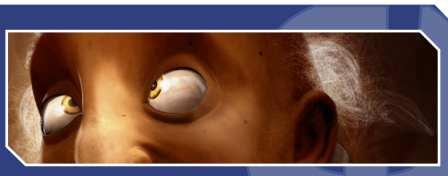
Squeezestudio has been my nickname since school, when I learnt the 'squash & stretch' technique in animation. I loved this concept! It took me a long time to explore the bouncing ball in all its aspects. As I was searching for a nickname, I found that "squeeze" gave a sort of cartoonish feel to my work, so I simply continued using this nickname and it naturally became the name of my small company when I worked as a freelancer. At school, and even now, I loved Pepeland (Daniel Martinez Lara). I respect him a lot and the name "Pepeland" really fits in well with his characters and creations. Pepeland... Wow! It does sound cool, doesn't it? I wanted to find my own name which would give a similar meaning to my own work.

Do you think you will ever create a little signature character that you could use along with your nickname, like Pepeland's little running stick character?

I never thought about it properly but it really is a good idea that I should be more serious about. I believe that the best emblem would definitely be my ostrich (freaky bird). I always wanted to create another character that I would be even more attached to but, until now, I haven't been able to. I hope one day to be as happy and proud of another character as this one.

So what do you think the future has planned for you?

Well, I hope for many new great characters and animations of an extremely high quality. I need to work harder, and more seriously. I hope for a steady job that I like in which I can improve in many areas and continue learning. That's all I ask for: a sweet life, and to enjoy this sweet life with my girlfriend and my little girl, continuing to evolve in 3D, and to work on a major production - fingers crossed! Right now, I am happy in both





my professional and my personal life. I would like it to continue this way, and that should be enough, even if it doesn't get any better!

Well, it has been a pleasure talking with you and I look forward to seeing your next character! One question before we finish: looking back, if there is one thing you would have done differently, what would it have been?

This is quite a personal interview and was a real pleasure, so a big thanks to you and your team, it has been an honour to be a part of this. To answer your last question, I have been involved in different areas in 3D - each one has helped me get to where I am today. I don't regret any choices that I have made or any decisions I have taken. There was always a good reason for these choices. Over the last 6 years in this field, I have met many nice people, have made good friends, and have learnt a great deal. I am happy to see how I have evolved in 3D and I hope to continue improving. I hope to have more good opportunities in this field and I will keep working hard to reach my goals!

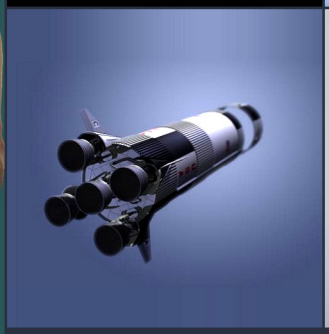
Patrick Beaulieu

For more work by this artist please visit:
http://www.squeezestudio.com
or contact them at:
squeezestudio@hotmail.com









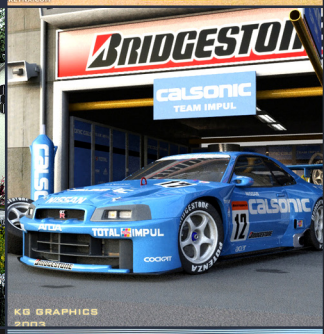



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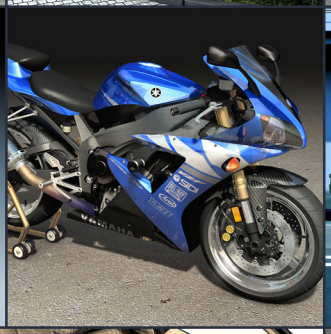
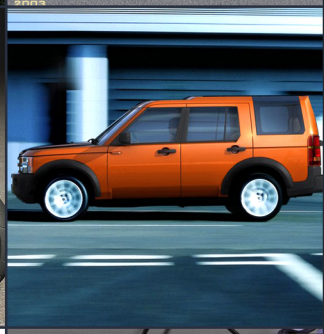
3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online

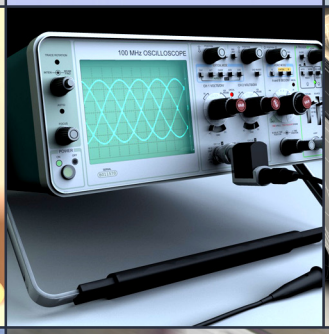




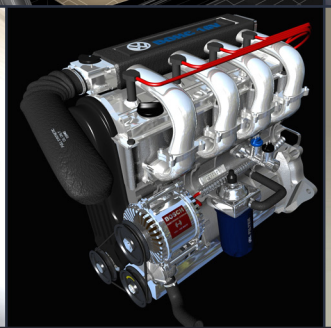









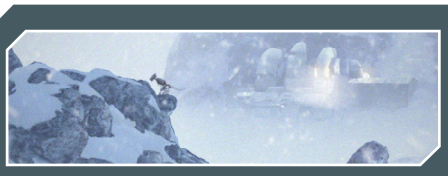





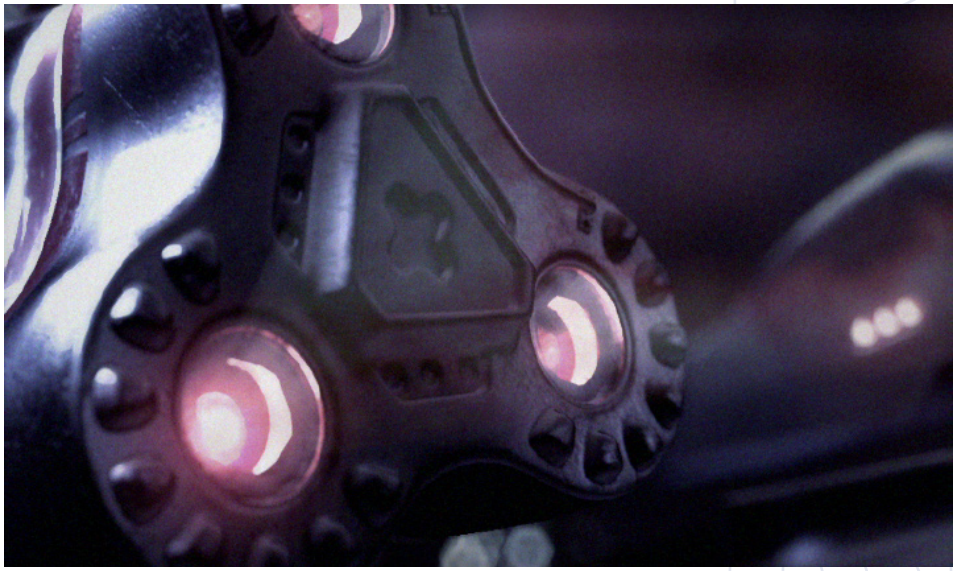

an interview with

manuel macha

Manuel is a German born 3D all-rounder, now working for Lucasfilm Animation Company, Singapore B.V, where he has worked on high profile projects such as the 'Clone Wars' animated TV series. We talk to Manuel to find out what has happened since the incredibly successful student film 'Dronez'...

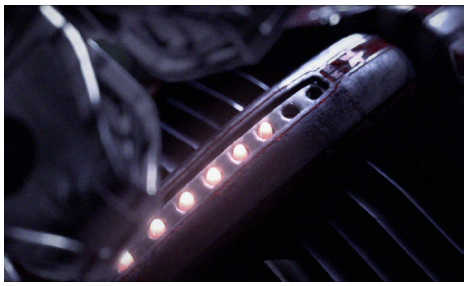


manuel macha



Hi Manuel, thanks for talking to us. Most of our readers will remember 'Dronez', which truly received wide praise from all over the world. How important was 'Dronez' for you?

From all the short-movies which I have created, I definitely like Dronez the most. I made this short together with my friends, Alex (www.huppi.de) & Leif (www.cgeye.de), with whom I have also previously worked on a couple of other projects with. The idea to create Dronez came rather spontaneously and we chose to take a different approach, compared to our earlier projects when we tried to tell funny or meaningful stories, but sometimes failing. So this time, we decided to concentrate on the visuals and hammered together a rather simple plot about a military robot running wild and turning against its creators. After all, we are CG artists and not story artists. We were surprised ourselves when we realised just how photorealistic some of our shots turned out, and I think that was also what set Dronez apart from other student-movies when we released it on the web, because only a few of them really focus on photorealistic VFX. Of course, we were all very happy that it was so well-received from the CG community.





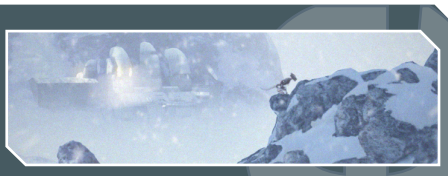


What projects have you worked on since then?

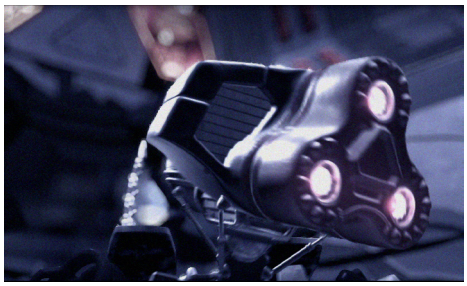
I was in the unfortunate situation to finish my studies at a time when the job market was completely down in Germany, so I'll always be thankful to the guys at 'Fitfyeight 3D' (www.fiftyeight.com) for giving me my first job as a character animator on TV commercials for the French market. I can really say that the first step into the job market is definitely the hardest. After that, it was much easier to get jobs. My next stop was at a company called 'Black Mountain' (www.blackmountain.com), located in Stuttgart, where I worked as a modeller/texturer,



















creating backgrounds for a feature film called 'A Sound of Thunder'. Working there was really cool as it was the first time that I worked on a project with other professionals from many different countries. That is one thing that I really love about my job: working with people from all different kinds of nationalities. Unfortunately, the movie didn't turn out to be so awesome. I have the DVD besides my TV-rack but, until today, I couldn't bring myself to watch the movie from beginning to end. After that came a big step for me as I took on a job as Modelling Supervisor for an Italian company who were outsourcing a full CG feature to India, which required me to move to Bangalore for a whole year and work with the guys at 'Paprikaas Animation Studios'. I took on the job rather spontaneously and flew to India, without knowing too much about the country. I can honestly say that I've never regretted the decision to go there. It was a really great experience to work and travel in India and I met lots of great people there. I even met my wife in India, so I can say that it truly was a life-changing experience. After a year, the modelling stage of the project was over and I knew that I wanted to see more of the world. I applied at a Sydney-based studio called 'Fin Design & Effects' (www.findesign.com.au) and luckily got the job! I must say, that Fin really is a great place to work. The company is extremely artist-friendly and I'm happy that I could work on some awesome projects during the time I spent there. I'm particularly proud of one TV commercial for Hyundai which we did at Fin. What I liked the most about working there was that the artists were given the chance to finish a shot completely by themselves - from modelling to texturing, rigging & animation, to shading, lighting & rendering - which I think really suits my skills and the way that I personally like to work. My time at Fin came to an end way too early when I received a job offer from Lucasfilm Animation Company Singapore B.V., which I just couldn't resist. They gave me a job as a character animator at their new Singapore-

based studio - and that is where I'm still working today.

You have recently been working as an author for 'Digital Production': a German magazine for CG professionals. What do you enjoy about this sort of work?

I think I've been writing Maya-related workshops for them for three years already. For me, it's a nice opportunity to stay up-to-date with new developments and techniques in the field of CG, as I'm always trying to write about topics which also interest me. You can be sure that I'll always write about things which will give me a little distraction from my day job. For example, right now I'm working as an animator so, the chances are now that I'll write about animation, but perhaps on the topic of rigging or rendering which will force me to do some research about that particular subject.

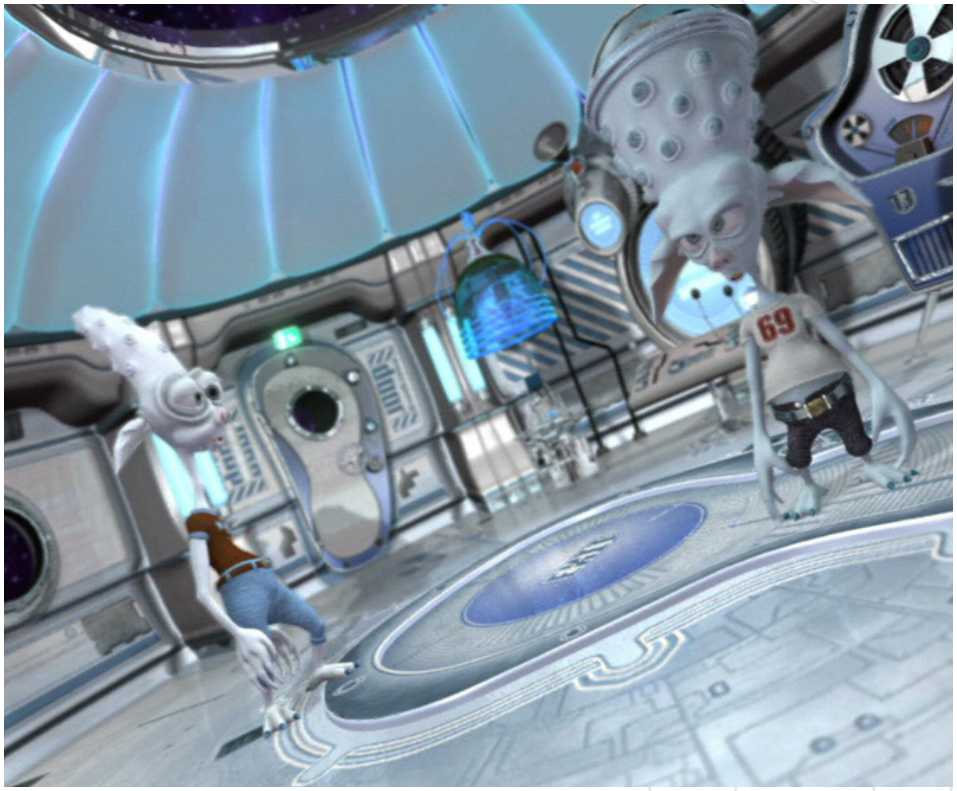
Of course, you are currently working for Lucasfilm Animation Company Singapore B.V... Enjoying life there?

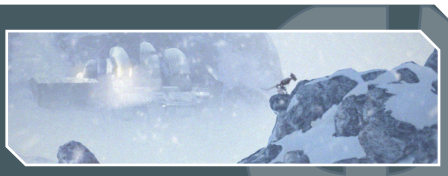
I can't really tell you a lot about what I'm doing here, except that I'm an animator on 'Clone Wars', which is a full CG TV series playing between Star Wars Episodes II and III. Again, what I like about working here is that I'm part of an international team. I think we have people from more than 30 different countries working in our studio! Life itself is very comfortable in Singapore, which is incredibly clean and safe. After some time though, you have already seen most of the places here, as it's a very small country, and if you're not particularly into shopping (which I'm definitely not) then you need to find something interesting to do in your free time. I, for one, like having BBQ's, playing basketball, or going to the cinema with friends and colleagues. Besides that, I'm also working on my own little project at home...



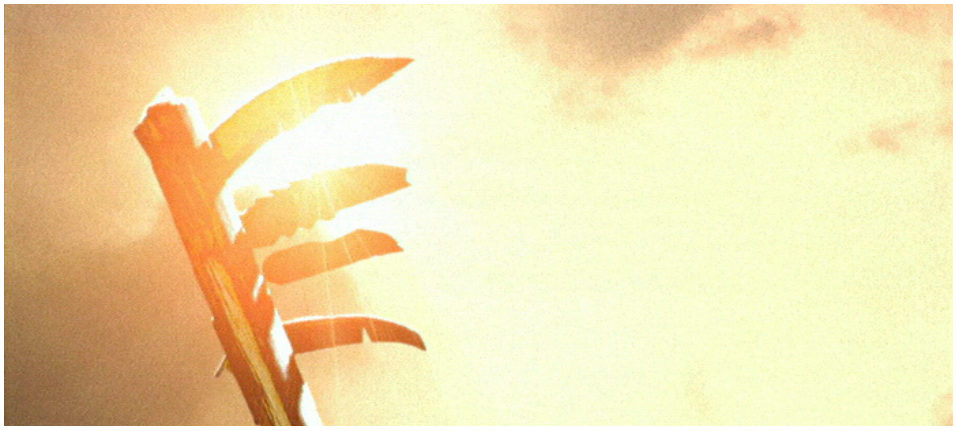








Manuel Macha an interview with









What would we find you doing on a regular day at Lucasfilm Animation Company Singapore B.V.?

For the first hours of the morning, you can find me working on my shots. If there are any animation dailies scheduled for that day, then I'll spend an hour or so before lunch with the animation director and other animators in the screening room to get critique on our animations. If time allows, and I feel like it, I'll go to the gym during lunch time to try and stay in shape (which I'm failing at miserably lately). Most likely, I'll spend the rest of the afternoon animating.

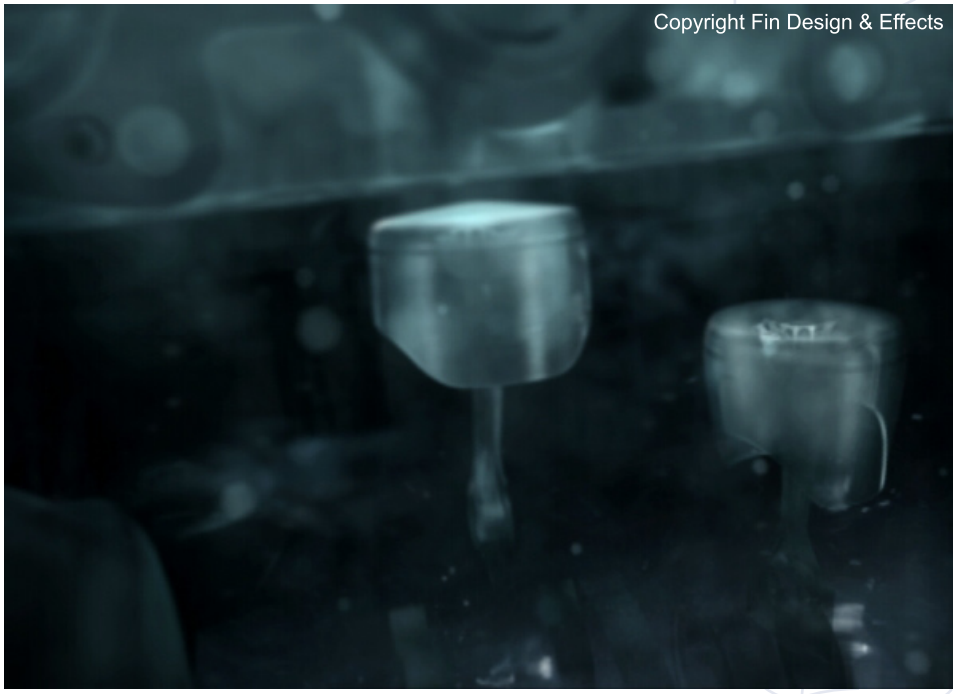
What do you think the future holds for you?

That's a good question and very hard to answer. I think my ultimate goal work-wise, is to one day become a director, but that won't be for ten or fifteen years. I studied film in Germany and have all the theoretical knowledge, and right now I'm getting actual hands-on production experience. I think for the next few years, I'll definitely be spending time pushing around keyframes, vertices or pixels, but it would be really cool if I could one day use all that experience in order to direct a TV series or a film. I also wouldn't mind, if I had the chance, to do more VFX work in the near future, because I think that's what I'm really good at. But who knows – the whole CG field is changing so fast! Maybe there will be some interesting developments that no-one can foresee at this point in time. I also think that it's important to find the right balance between work and private life. In that respect, I hope one day to have my own house, garden, kids and a dog. That's actually quite a normal thing for many people but it's not so easy to have that in our job-field, where you're changing companies, and even the country you live in, every few years.

You are currently working on a personal project with a colleague. Tell us more about that?

I have just started working on a new short movie with my friend, Kyle Dunlevy (www.kyledunlevy.

com), who is also one of my colleagues from Lucasfilm Animation Company Singapore B.V. The working title is “Fletcher’s Feast”. Since our free time is limited, and we’re also both married, we came up with this idea for a short movie which we think is still do-able within the little time that we have to work on it. This means that we have only one character and one location. We’re at a pretty early stage right now: I’m modelling the set and the character, whilst Kyle is working on the animatic/layout.


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When and where can we see more of it?

Our original plan was to have a finished short-movie in 8 months. We’ve been working on it for two or three months now and I think maybe it’ll take a bit longer than another five months to finish it. I think we’ll be done sometime in the second half of 2007. When the time comes, and we feel that we’re at a stage where we have enough work done to show something to the public, then we’ll definitely have a website or a production-blog. We’ll let you know, when we have something to show.


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What piece of advice do you have for any aspiring artists?

Especially for people who are trying to break into the industry, my advice to them would be not to give up too easily! Right now, more people than ever before are trying to get a job in CG and it’s really competitive out there. I think a good way to get your foot in the door is through an internship because, besides good artistic and technical skills, knowing the right people really helps. Also, having a big network of people is essential in order to always be up-to-date regarding new projects and opportunities. Of course, all the things I have mentioned will only make sense if you have the artistic and technical skills. Most other artists I know all have this natural curiosity in common - always trying to improve & learn new things!

Thanks very much for talking to us. Good luck for the future.


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Manuel Macha

For more work by this artist please visit

www.manuelmacha.de

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Interviewed By : Ben Barnes

BOXX



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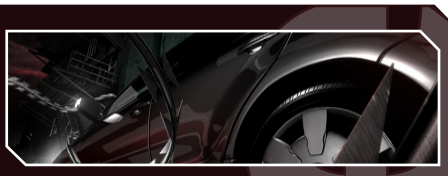
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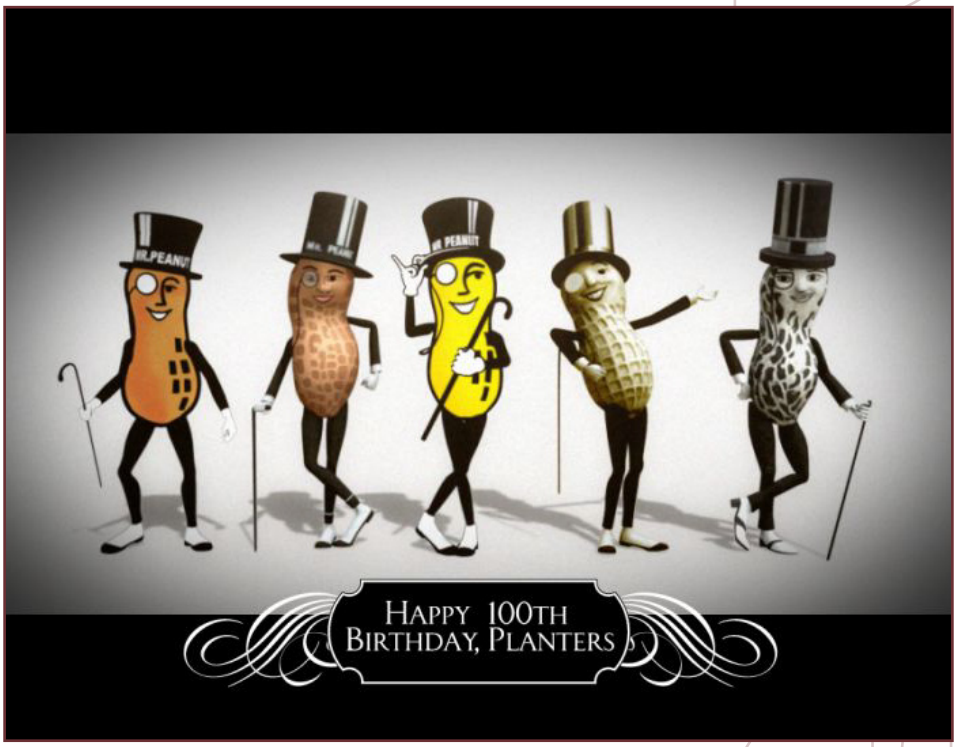

Shilo™
Creative production studio
Co-founded by Jose Gomez and Andre Stringer in 2001, Shilo is an Emmy Award winning creative studio of designers, animators and directors who all share a common obsession to forge a new perspective in storytelling. Shilo strives to not only push the boundaries of contemporary motion graphics and live-action direction but also to strike a nerve in an increasingly "numbed" audience....



Shilo™
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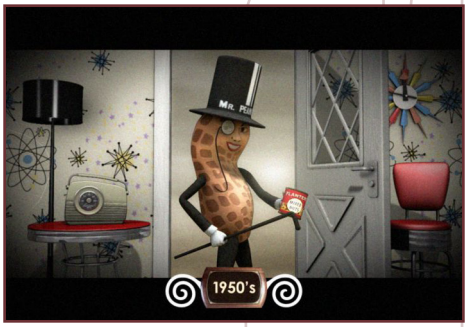
Hi Guys, thanks for talking to us. OK, let's start at the beginning, as opposed to the end: when and where was Shilo born?

André: Jose and I had collaborated on a few projects and really respected each others' work, so in 2001 we decided to join forces - and Shilo was born. We share a number of interests; at the time we were both skateboarding and involved in skate culture and were both working as artists and filmmakers. I think we saw it as a way to broaden the scope of work that we were exposed to, and it has certainly done that. It has given us opportunities to collaborate with people that, chances are, we never would have met otherwise.























What things were most important to you when the company was young? Did you feel that you had to work on anything that was offered to you, or were you selective over projects?

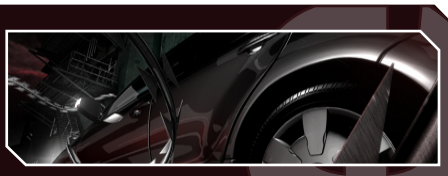
Jose: Well, at five years old, I suppose we're still a young company, although five years in this business can sometimes feel much longer. Early on, we were doing some long form work, which helped because we didn't have to take on too many projects that we felt weren't a good fit for us. To this day, we try to attract work that we find interesting because of a particular client, or a product, or because of the creative challenge involved.

Shilo pretty much gives every CG discipline a go, depending upon what the client requires. How have you managed to build the team for this?

André: We have always utilised CG in our work so, right from the start, we looked for talented designers, artists, and animators that brought those particular skills and mindset to the table. We see ourselves as storytellers first and foremost, so finding like-minded creative people, no matter what their speciality, has been a key factor in how we have gone about assembling our team.

Let's discuss the work itself. You offer a whole solution for concept, design and direction. How important to Shilo is it that you get to create your own ideas, as opposed to just recreating a client's vision?

Jose: We're quite flexible in the manner in which we approach a project. Clients come to us for a number of reasons with concepts in various stages of development. We put equal effort into a project whether we initiated the concept or the client developed it. Sometimes boards have been created but there are gaps left where a particular effect or design solution needs to be communicated. Other times we take the genesis of an idea and evolve it into a fully-developed solution. Both types of projects have their own



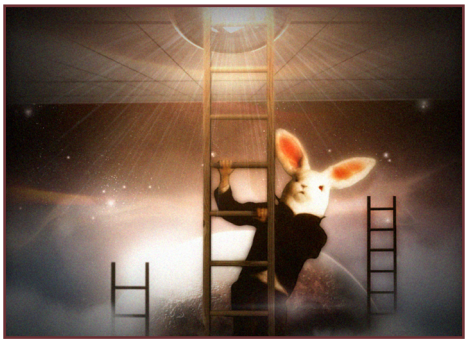
unique challenges but are equally fulfilling to work on. In the end, as André said, we are "storytellers" and it's our job to craft an engaging narrative, regardless of where the initial concept stemmed from.















For our readers who are not yet aware of Shilo, you have produced a music video for 'AVA', adverts for 'Scion' and 'GAP' and the title sequence for 'SCI FI' Channel's hit series, 'Eureka'. How cool is it to be producing work on such a large scale to be seen by huge audiences?

André: We love creating visually compelling pieces, regardless of audience size - it's our passion. That said, the exposure that our work has had over the past few years has been really great for the studio. In this industry you're only as good as your last project, so we're honoured that people see our work as being worthy of the type of projects we've been getting. It took a while to get to this point.

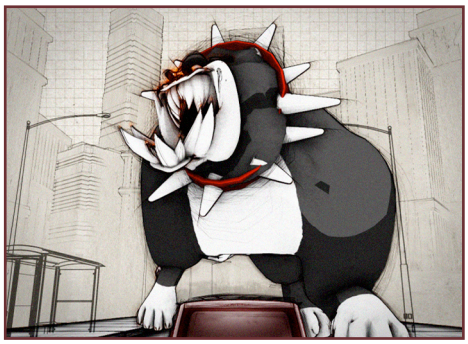
We actually featured an article regarding your Scion ads; three of the coolest car adverts I have ever seen to date. Where did the inspiration come from for those?

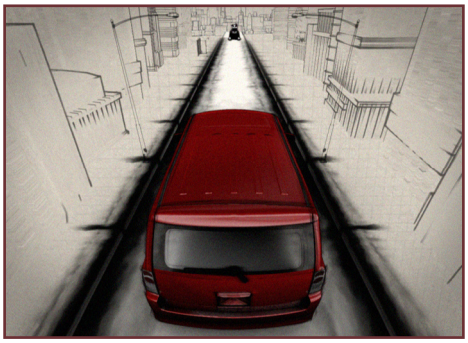
André: Each one of the three spots you're referring to, "Bulldog", "Demon", and "Shadow", stemmed from the concept behind a Scion print campaign called "Inspiration/Realization/ Personalization." We took the whole idea of "personalization" through "accessorization", and that inspiration can come from anywhere to a new level. We created stories that showcased the cars in unique environments and then had the environments interact directly with the cars. It's a bit like a visual mash-up. Here we have a case of art imitating life, like actual Scion owners customising their rides, our Scions end up tricked out one-of-a-kind cars. In our case, the transformation is a bit more magical and more interesting to watch than the reality.

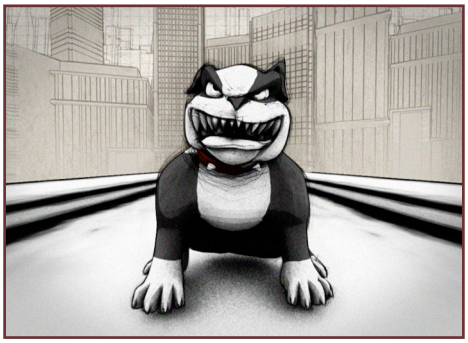














Music videos give pretty much complete freedom for creativity. Would you be happy making music videos all day long?

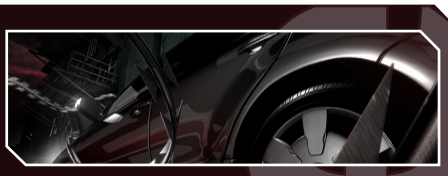
Jose: Music videos are interesting for us for a number of reasons. Firstly, you're translating another artist's message into a new medium, which has its own issues that need to be resolved. Secondly, in many respects, it's like a short film, so you approach it differently from something like a broadcast promotion or a commercial. Compared to a commercial, a music video is long-form and you build in acts like a stage play, but in the end it has to tell a story that either parallels the song or expands on it. They can be exciting to work on but for us, the shear variety of work we do - from film titles and broadcast packages to show opens and commercials - is what keeps us engaged creatively.

What is your favourite project to date? Do you have a dream project in mind?

We can't pick a favourite but we do know that we love working on self-initiated projects. There is something extremely challenging about having ultimate freedom to tell a story in precisely the way you can see it in your head.

What has Shilo got in the pipeline for future projects?

André: We have a number of projects in the pipeline for a variety of clients, but we are also working on a few interesting ideas for content that is ours alone, that is to say not client-driven, and we're excited to see where that takes us. We have also been hard at work on a book and DVD project called "We Make It Good", which should be available in January. It has been an exciting project to work on because we are showcasing an array of conceptual work that inspired, and was inspired by, our commercial work. There's a fair amount of experimental work combined with some of our commercial, broadcast, and music videos and it's been a terrific experience to put something like that



together. We are really excited to see the response it gets.

We like to ask all our interviewees this last question: “Do you have one piece of advice for any aspiring artists?”

Jose: Anyone aspiring to be in a creative field - any creative field - should never be afraid to fail or to take chances. It’s when you free yourself of these constraints that the best and most creative ideas are born and a project can take on a whole new dimension. Concept is “king”, so the more creative you can be initially, the better your work will turn out in the end.

Thanks very much for talking to us, and the very best of luck for the future.

André Stringer & Jose Gomez

Shilo Founders & Creative Directors

Contact eMail : tracy@shilo.tv

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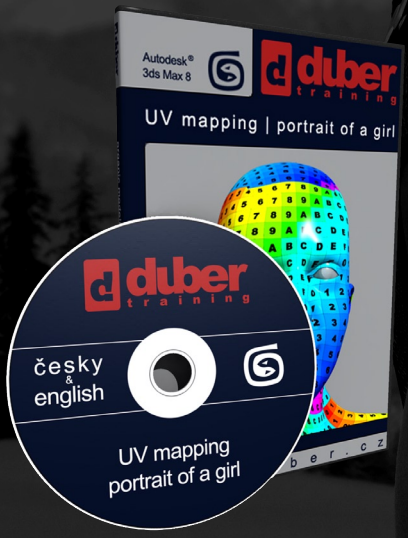
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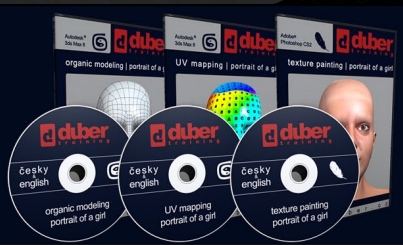
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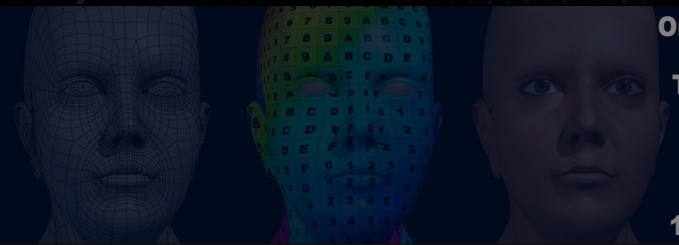


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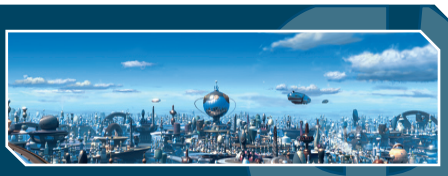
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Robots

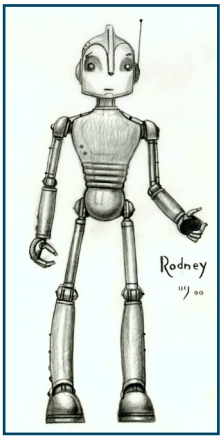
by Pierfilippo Siena

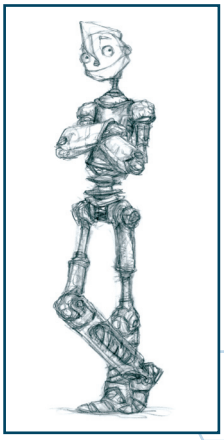
Once in a while, 3DCreative takes a walk down the historically brief 'memory lane' of 3D digital film-making. This month we have an in-depth look at Blue Sky Studio's second CG release, 'Robots'...

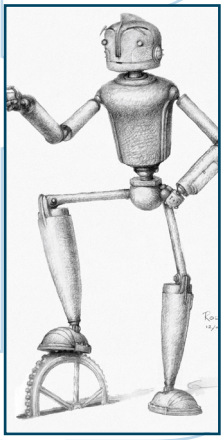




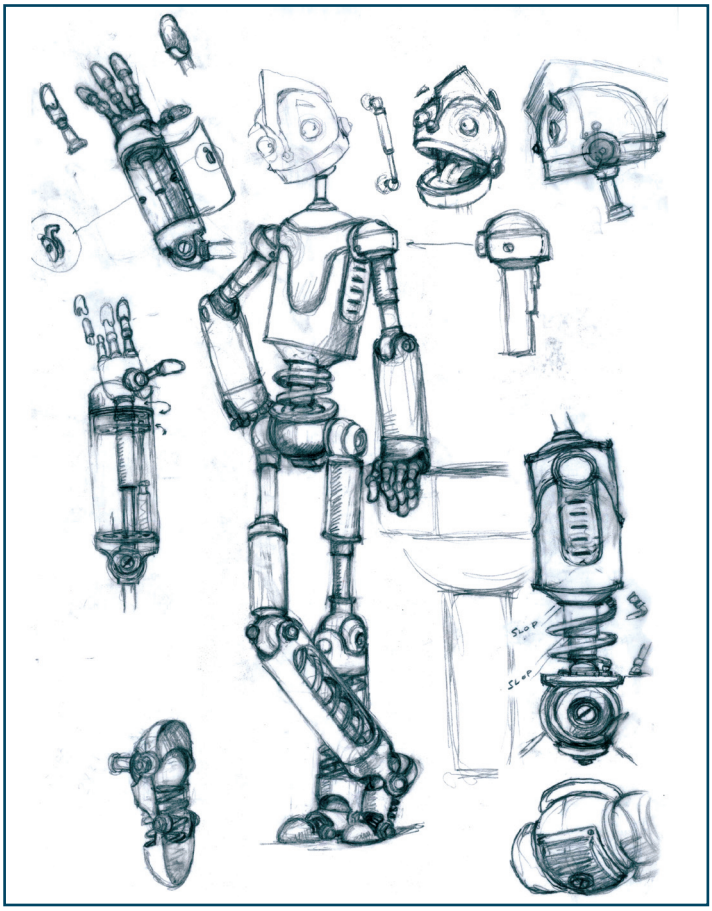


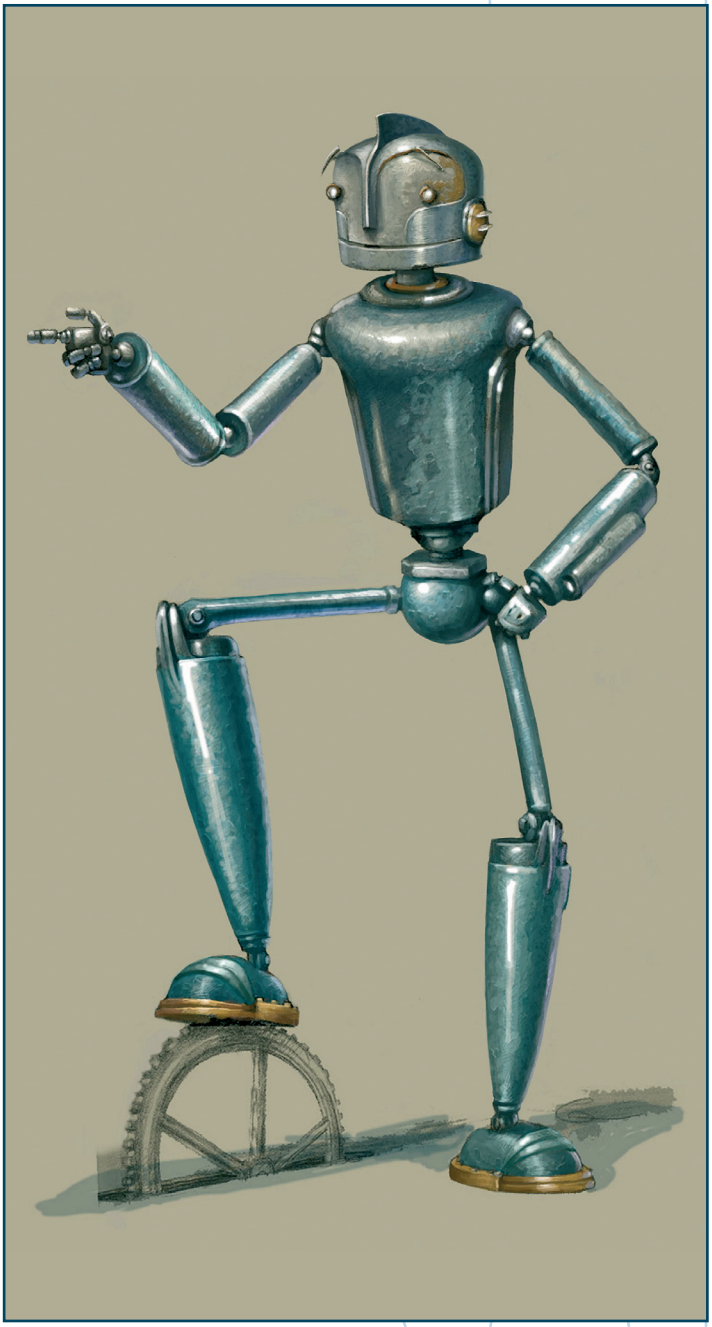


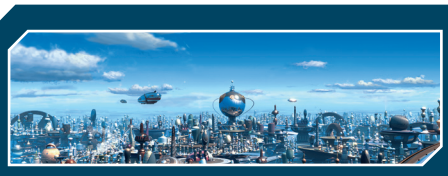


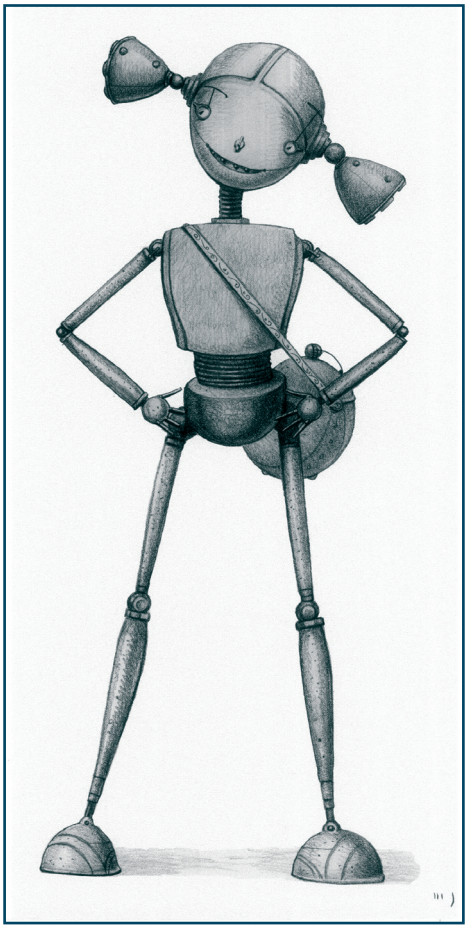


Chris Wedge indeed deserves all the success he has had until now, from the beautiful 'Ice Age' to the short clips starring the clumsy prehistorical squirrel Scrat, to 'Robots', of which a sequel already seems sure. After 'Ice Age 2: The Meltdown', came the prediction that Robots, signed by Blue Sky Studios, would become a new CGI masterpiece. Filled with homage to many sci-fi movies and famous quotations, Robots entertains many brilliant ideas, such as: the baby robot which is delivered in an assembly box by mail, screaming and shouting, forcing the baby's parents to turn down the sound level; their amazing ability to add "electrical" and "mechanized" references to the human world's proper aspects; on public toilet doors in Robot City, we can see the male and the female socket symbols in order to identify the robots sex. Towards the end of the film, Rodney Copperbottom's (dubbed by Ewan McGregor) father plays a

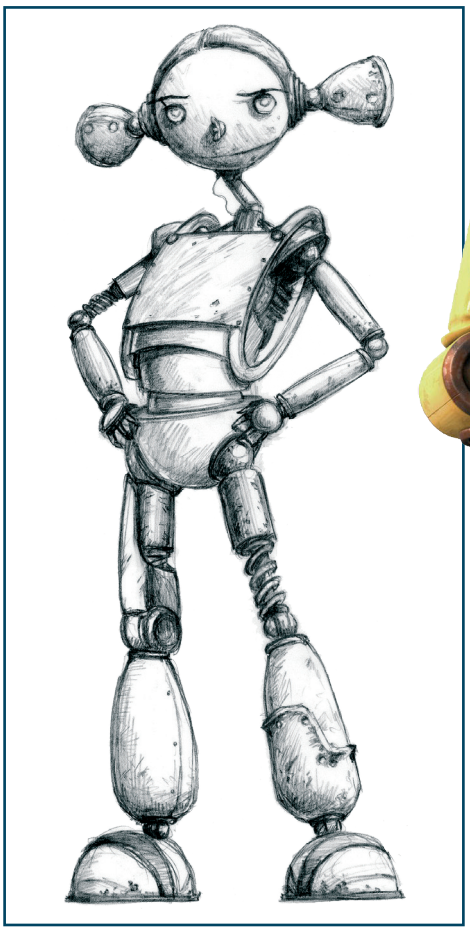


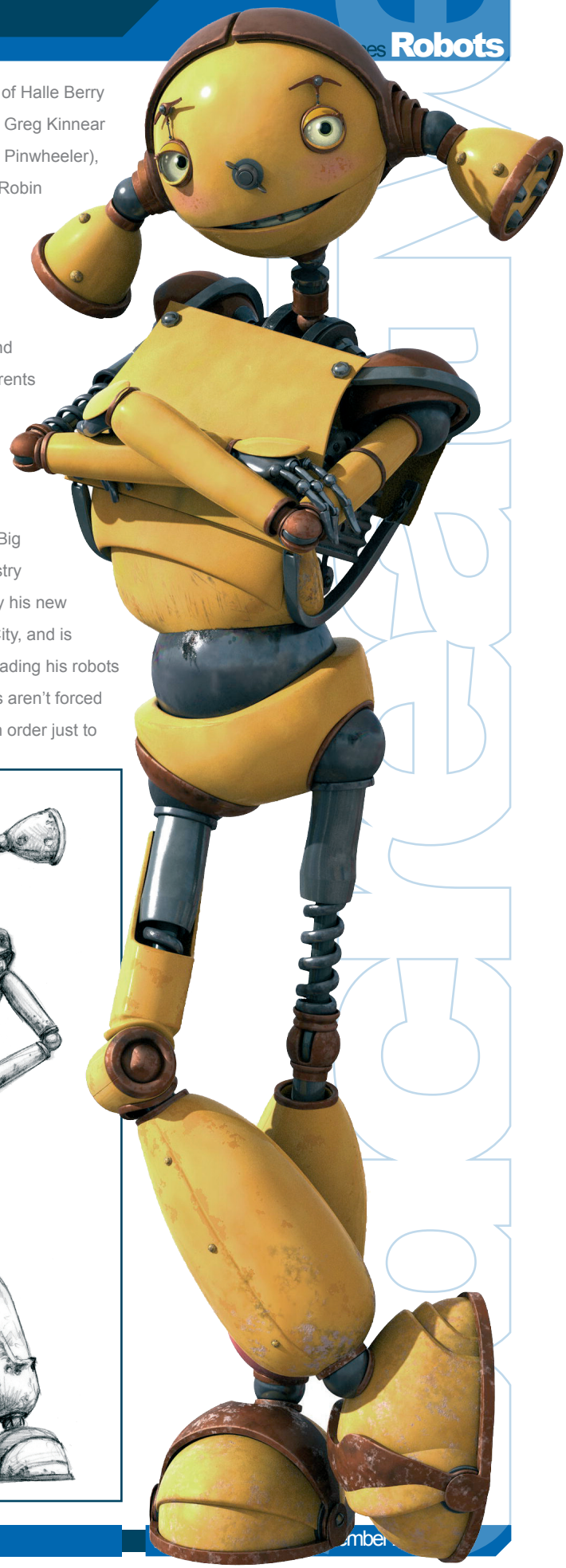




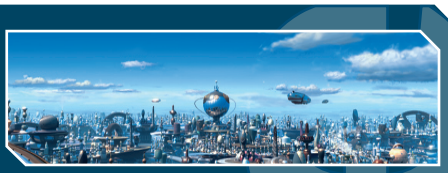


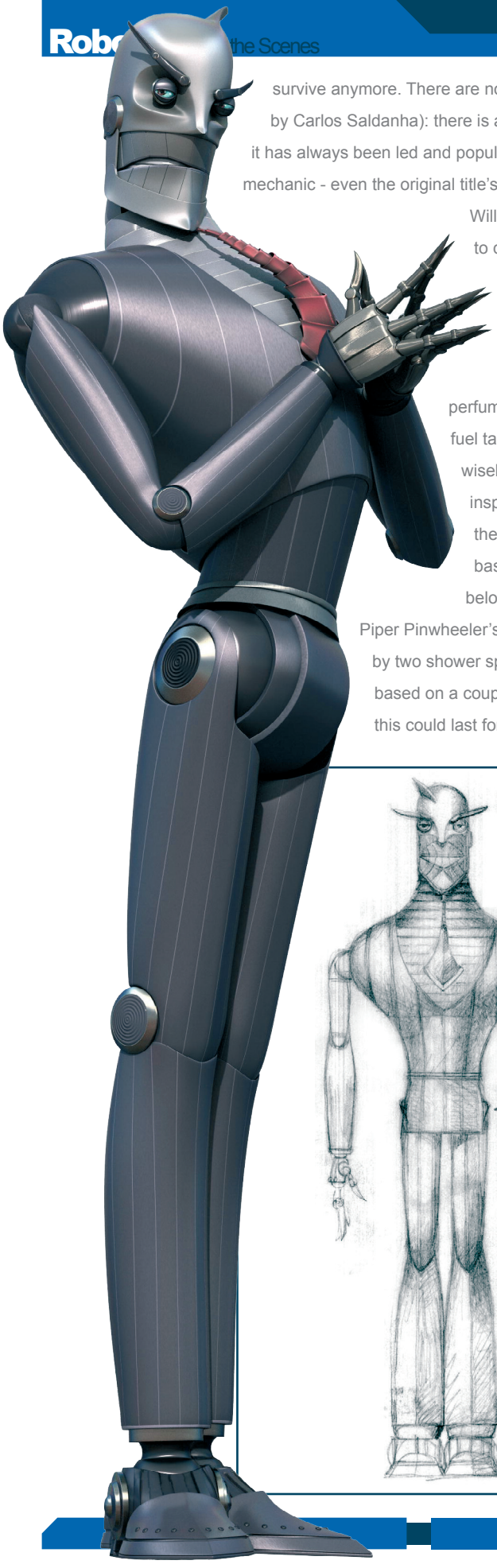
Robots employs the vocal talent of Halle Berry (Cappy), Mel Brooks (Big Weld), Greg Kinnear (Ratchet), Amanda Bynes (Piper Pinwheeler), Drew Carey (Crank Casey) and Robin Williams (Fender). The movie is about a CGI animated story - the most anti-consumistic ever to appear on the big screen - of Rodney, an inventor robot and dreamer, who leaves with his parents in Rivet Town. To meet his idol, Big Weld, he disappeared for a long time from the public scene. After discovering evil Ratchet's conspiracy to deprive Big Weld's authority of his own industry and kill him, Rodney is helped by his new friends, which he met in Robot City, and is able to help Big Weld back to heading his robots factory, so that all the inhabitants aren't forced to buy expensive spare pieces in order just to





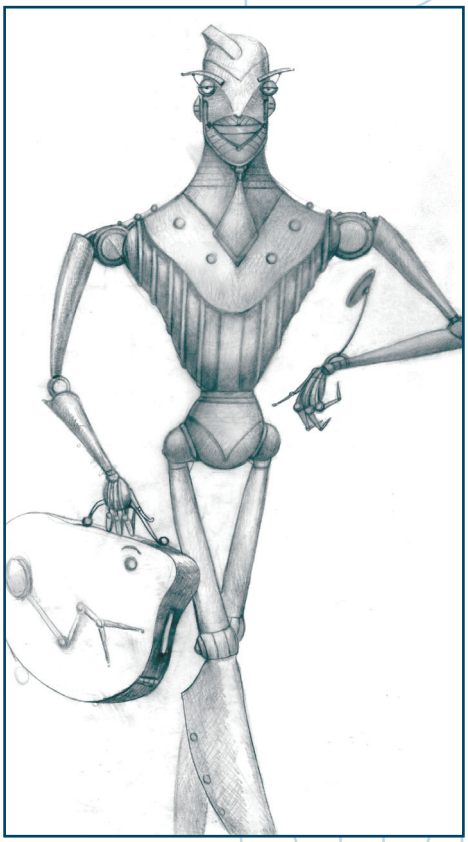
musical instrument, and amongst the listeners the opinion is that the song should be a Jazz and Funk fusion called "Junk" - but this is not all; when Cappy the "she-robot" skates along the circular track, the reference to Norman Jewison's 'Rollerball' (1975), and its unlucky remake by John McTiernan, is obvious. When one of the robots, whilst looking for a new vocal apparatus, finds a triangular modulator, he is made to say odd phrases about the "force", for kind concession of Lucasfilm Ltd., once plugged. Including the iron man from Victor Fleming's Wizard of Oz (1939), an "oily" version of "Singin' in the Rain" (by Gene Kelly and Stanley Donen in 1952) witnesses the rain being replaced with Next Limit Technologies' RealFlow software oil fountain - even the tune is by the HAL 9000 computer in Stanley Kubrick's '2001: A Space Odyssey' (1968).

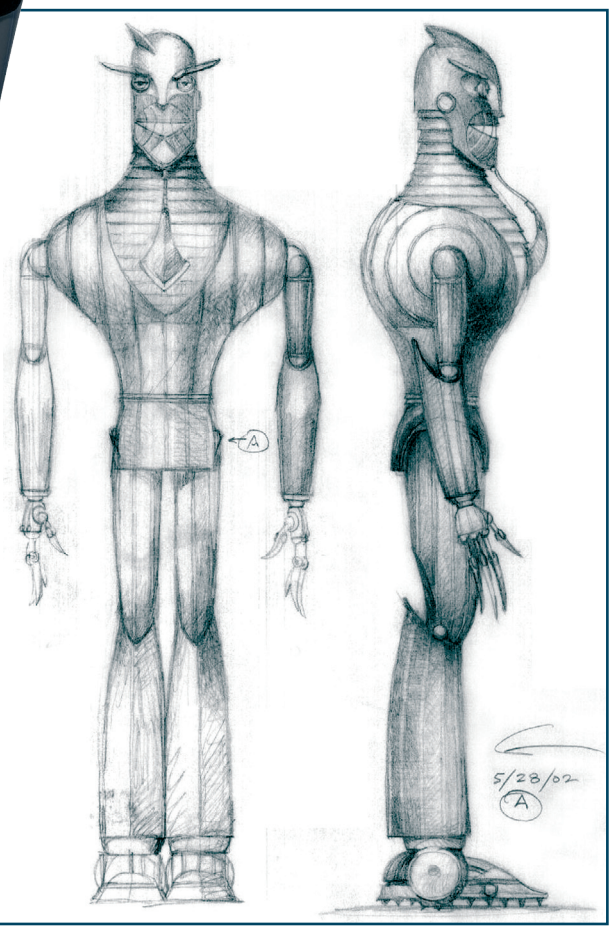


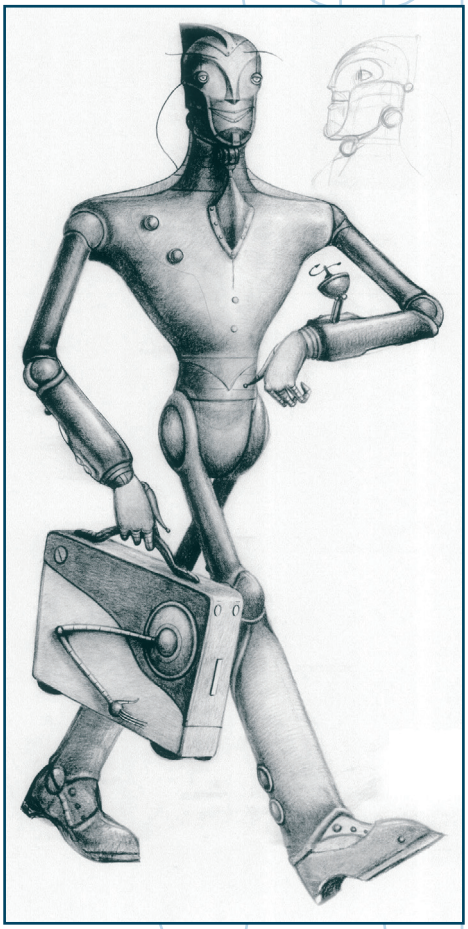


survive anymore. There are no human beings in Robots (co-directed by Carlos Saldanha): there is a world constantly in motion, run like it has always been led and populated by robots, where everything is mechanic - even the original title's logo.

William Joyce, TV series creator, began to develop Rivet Town and Robot City by hanging around in junk deposits, factories, second-hand stores and kitchens, searching for curious objects such as car parts, coffee pots, perfume bottles and even a Harley Davidson fuel tank. Weird shapes, gears and materials, wisely converted into mechanical forms, inspired the architectural elements of the movie. Rodney's head and torso are based on an old Evinrude engine, which belonged to Chris Wedge's grandfather, Piper Pinwheeler's hairdos (Fender's sister) were inspired by two shower sprinklers, whilst Fender's eyebrows are based on a couple of windscreen wipers. Examples like this could last forever, considering that the artistic team

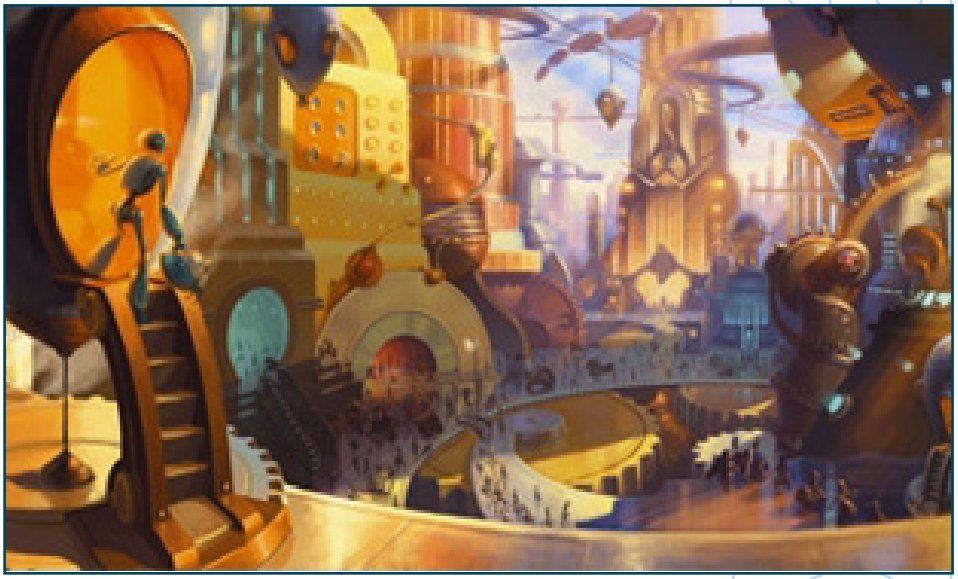


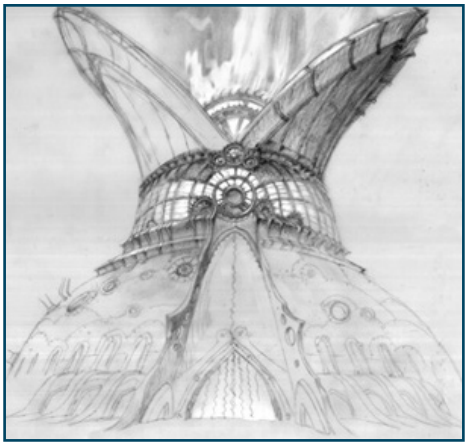


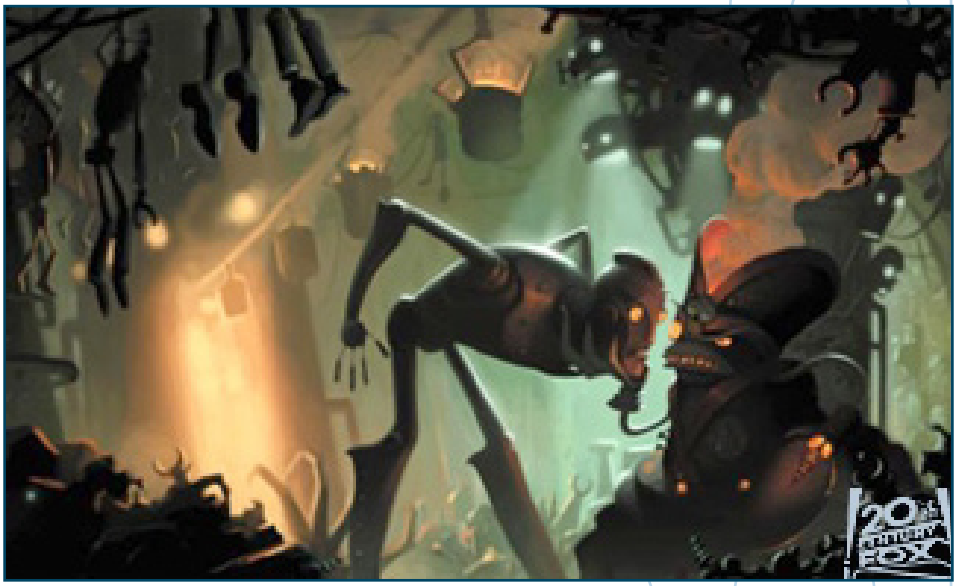


had access to 100 years of industrial design. A team of 14 people, supervised by Michael DeFeo, took care of the 3D model characters, developed with Maya's subdivision surfaces (Sub-D). These were created with a technique somewhere between NURBS and polygonal modelling, composed by a polygonal mesh-made base and automatically subdivided by the software in order to obtain a defined final shape. Since the Sub-D mix, the NURBS surface power, with the convenience of polygonal modelling tools, were perfect for the Robots' complex characters. The devilish Madame Gasket, inspired by a furnace, had the most complex 3D geometry overall - more than the entire sets and characters in Ice Age. In order to speed up the 3D modelling creation process, as soon as Rodney, Fender, Cappy, or whichever new robot was completed, the relative components were archived and catalogued,

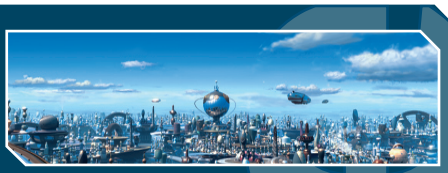








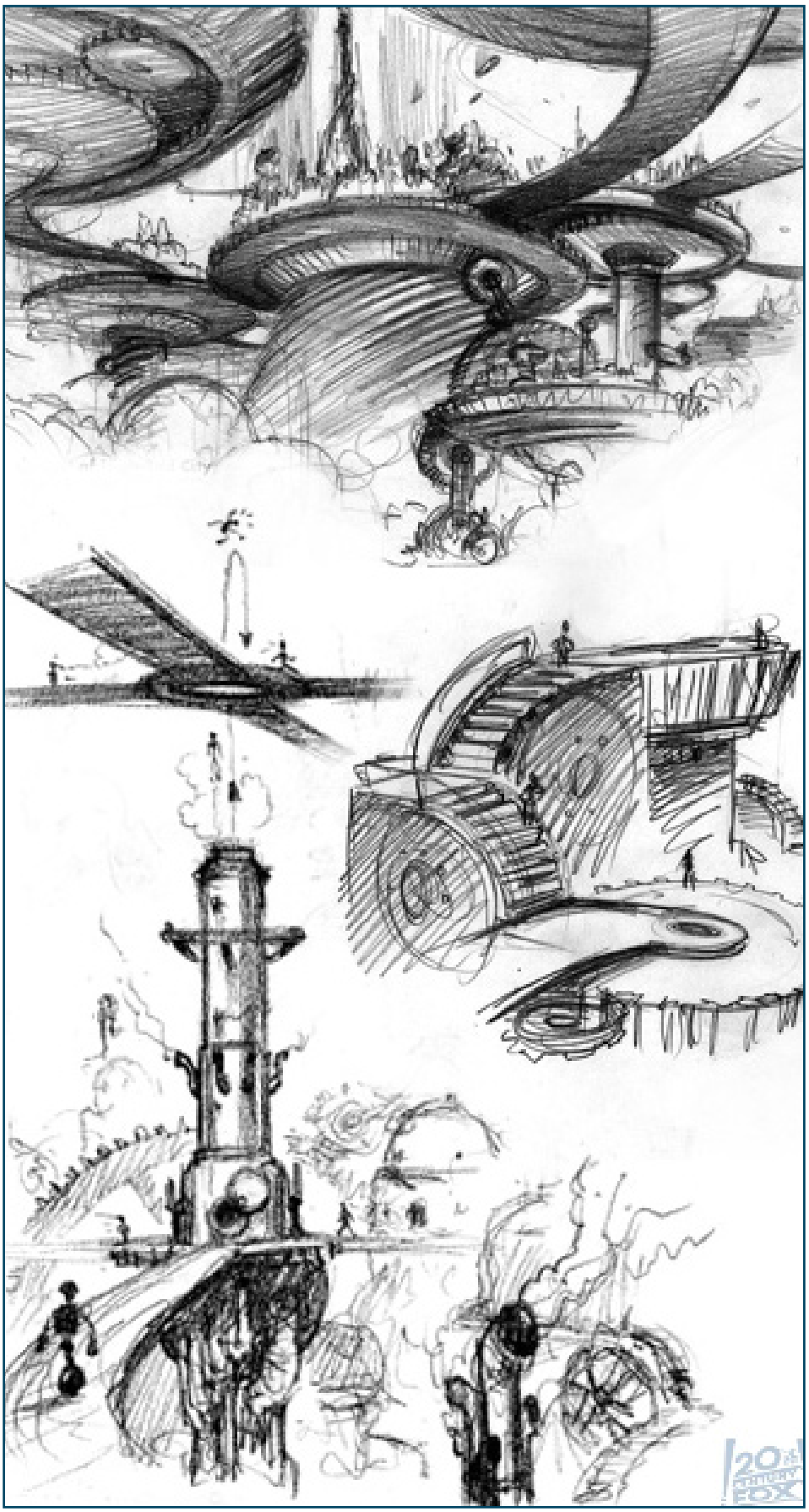


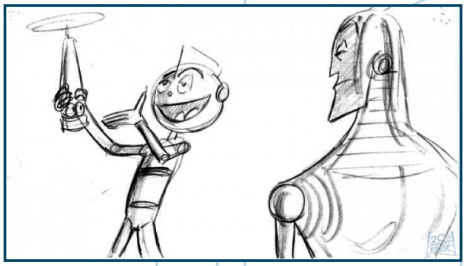


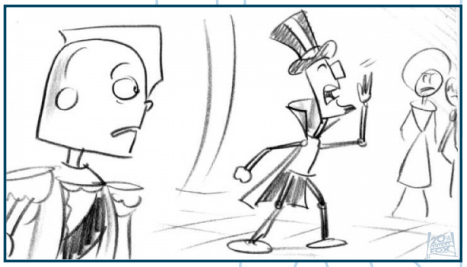


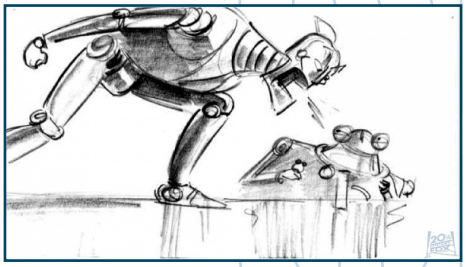


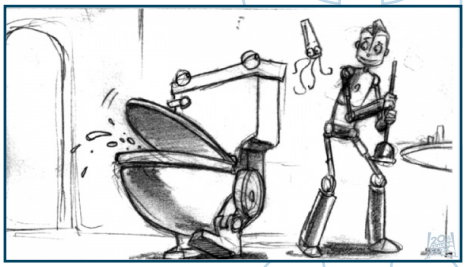
after disassembling the models, in a database (prepared by Blue Sky Studio itself just for Robots) to ease the successive modelling job with spare parts. Another modellers' technical goal, in order to obtain typical 2D cartoon "squash-and-stretch" movements (although applied to rigid metallic objects), was the idea of arms and legs fixed to the torso through spherical joints which were able to extend, thanks to a telescopic structure based on

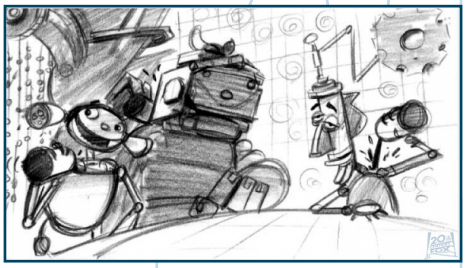




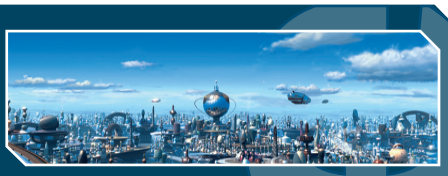




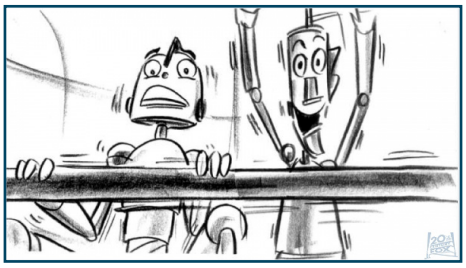


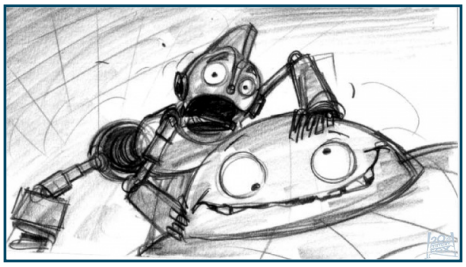


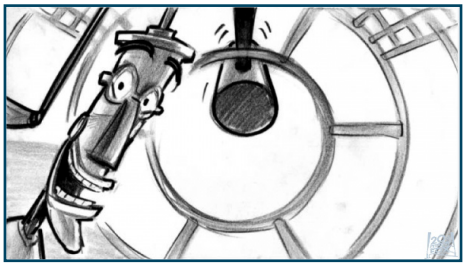
flowing cylinders. In modern models, such as Ratchet - with “trashing intentions” - or old and useless robots, body flexibility was achieved by overlapping many curved metallic sheets, ties included, as an ancient armour. In Robot City it’s often possible to see bipeds, single or multi-wheeled robots. With access to a library of extended heads, torsos, arms and legs, the artist could select the preferred elements, fix

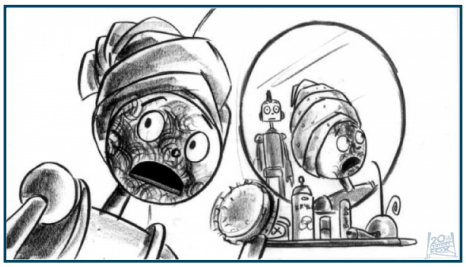


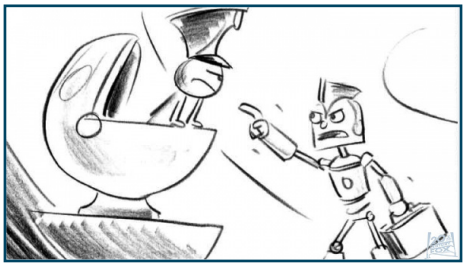
them above a pre-defined inner rig, whilst the system would have automatically supplied the "components dimensions' conformity". The same procedure has also been applied to the city itself: an urban mess with style influences from Art Deco and 50's automobile design to futuristic sets. Inspired by a clock mechanism and built in layers (also referring to the social environment, where the lower levels are related

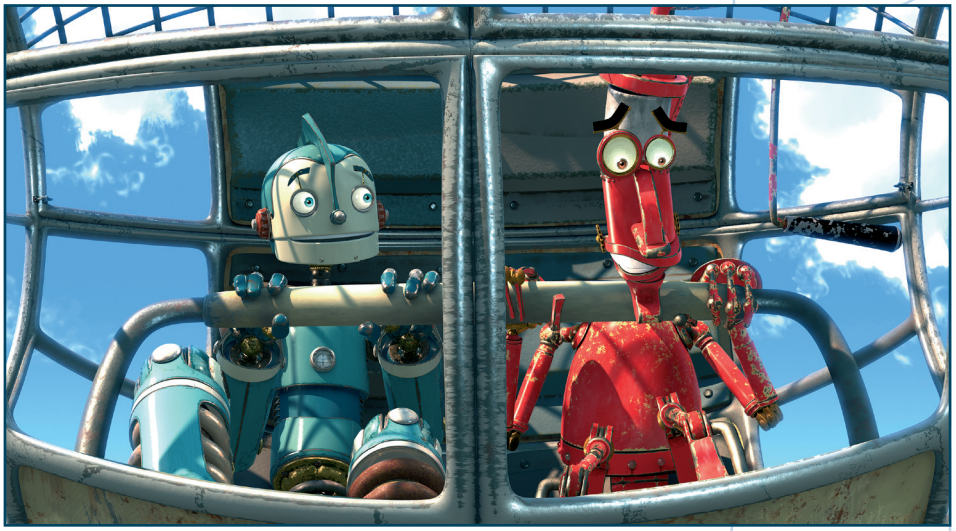




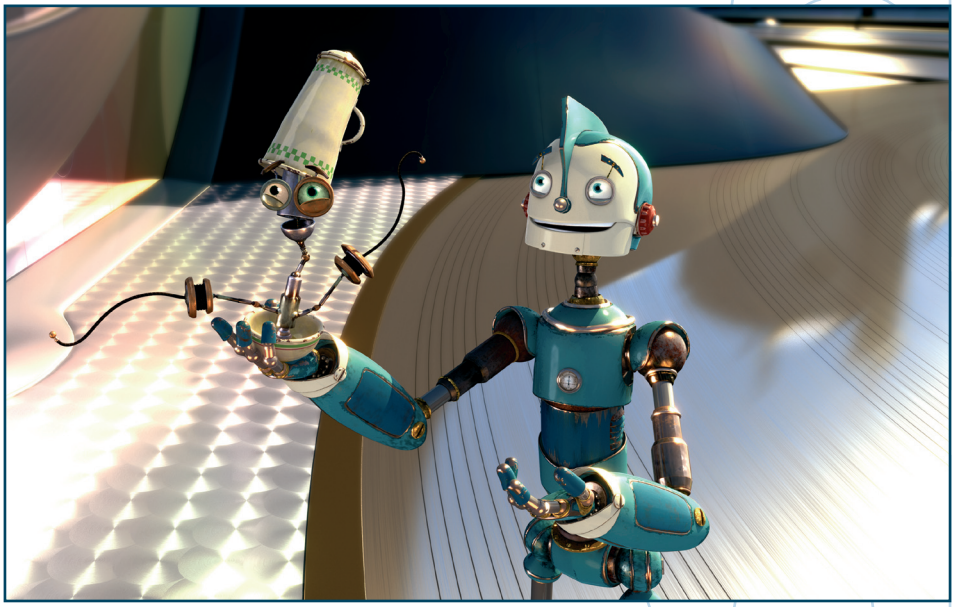




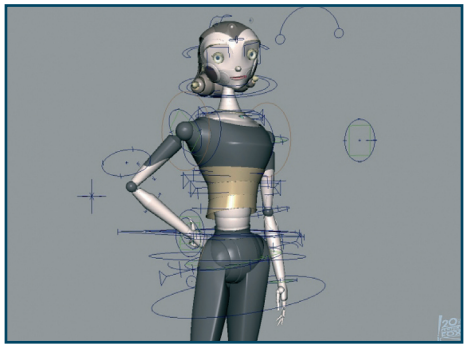


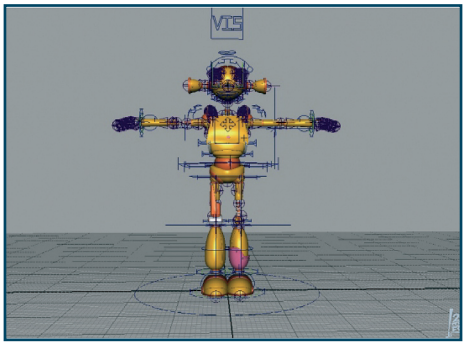


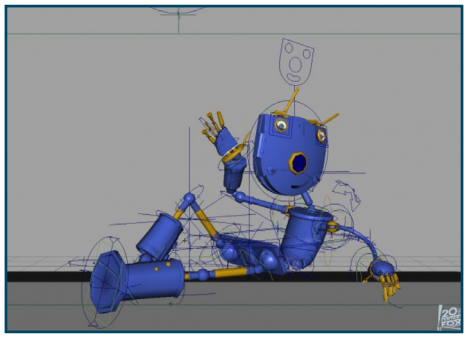


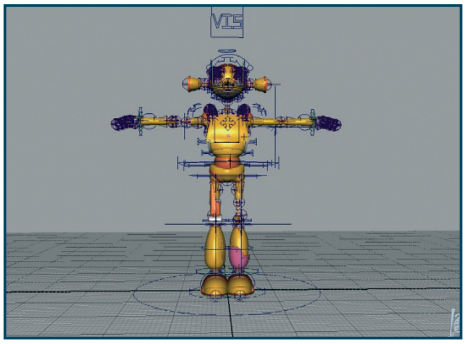


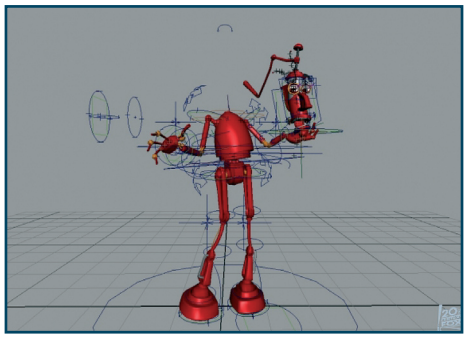


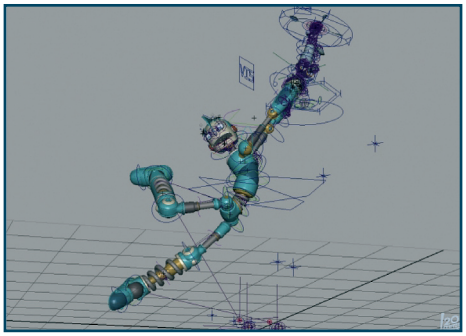


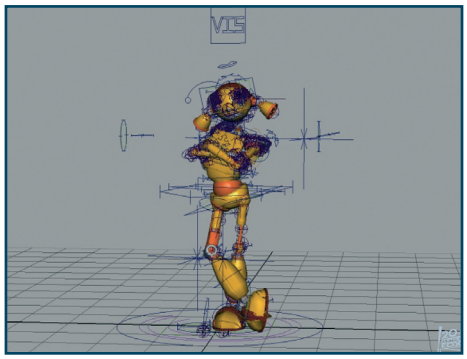


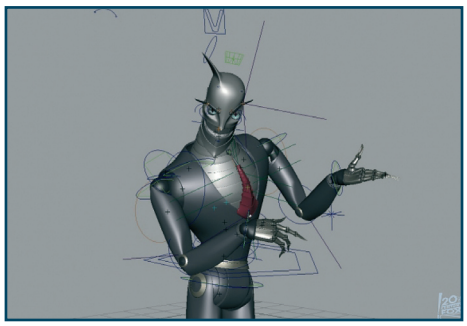


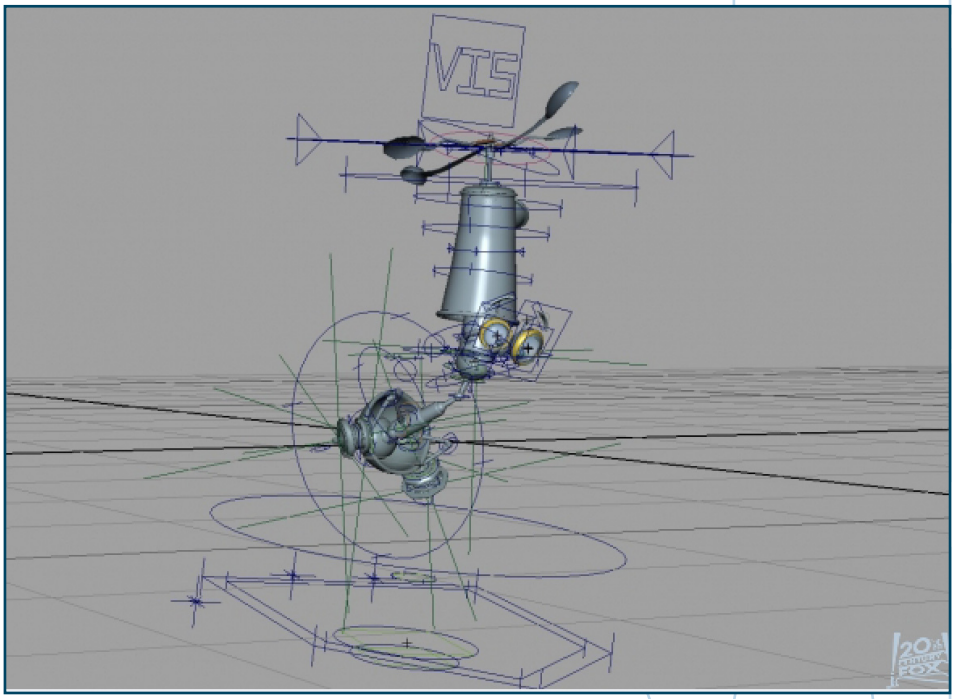






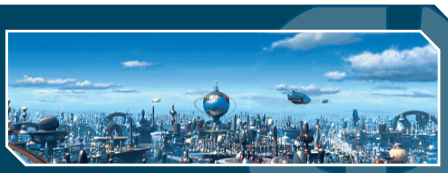


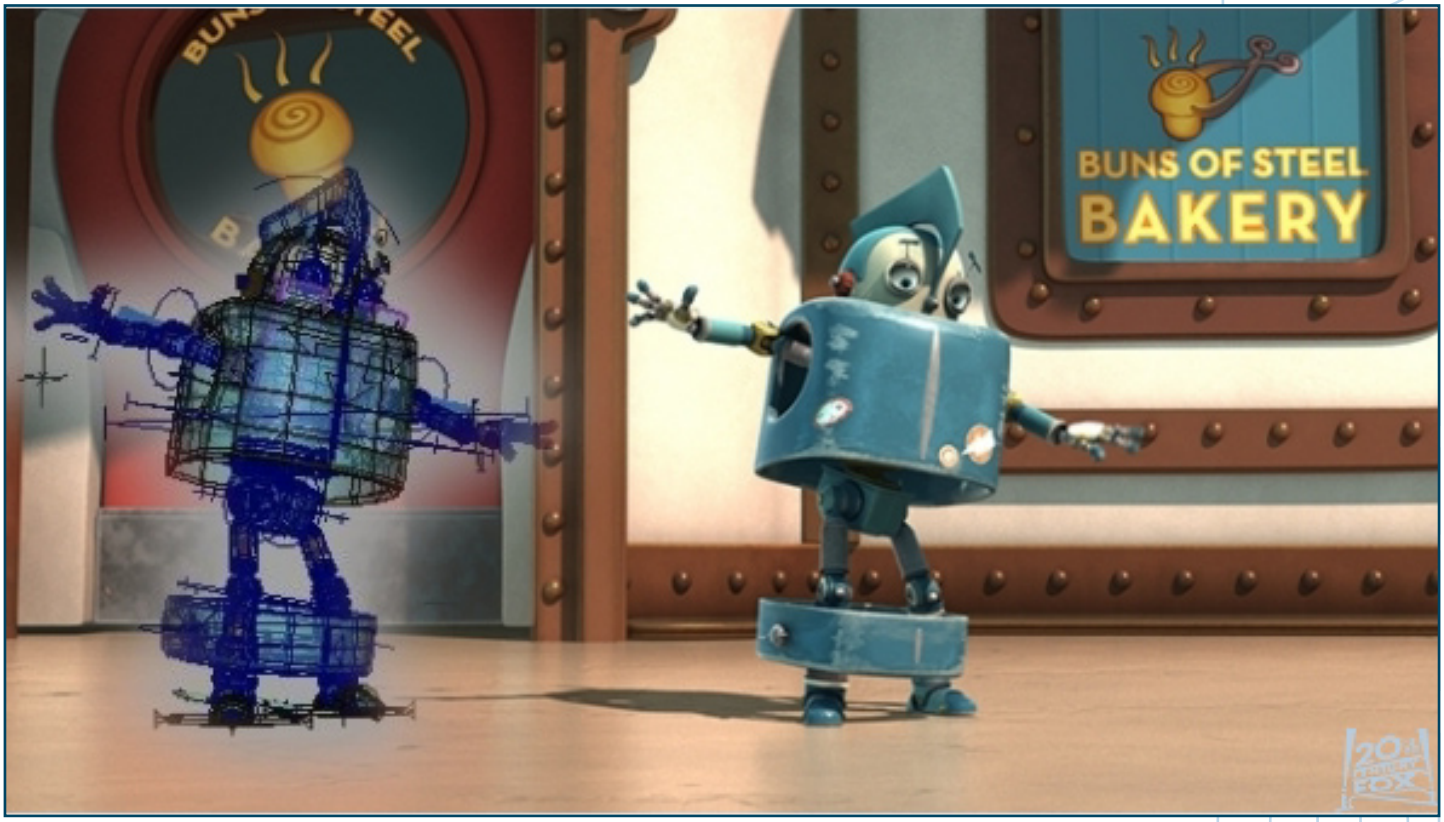




to the industrial revolution and the higher levels more modern styles), we find, in order from the ground upwards: a pre-industrial rusty and dirty world made of heavy beams and huge support structures; the Rusties, Fender, Piper, Lug, Crank Casey and Diesel - common robots constantly trying to survive and fighting to prevent their mechanical parts from wearing out; going up again we find the families, surrounded by a colourful environment filled with irregular inhabited units; above the middle-class robot level is a neat and sparkling world - the centre of successful companies - painted with bright and pleasant colours. Evil Ratchet - the new head of Bigweld's founded company - commands with no mercy.

A modular construction technique was used where the buildings were repositioned, based on the desired shooting angle, following a new operation mode adopted by Blue Sky Studios. In the previous Ice Age, only what was actually filmed by the camera was 3D-modelled, forcing artists to re-start from the beginning as soon as the set shot varied. With later Pixar Animation and PDI/DreamWorks SKG productions, Blue Sky Studios upgraded the creative process



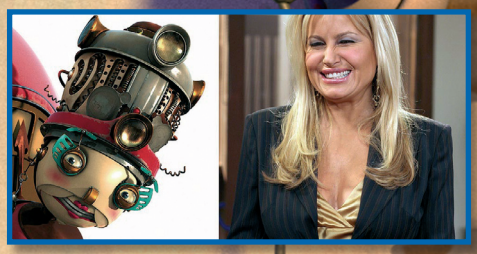






through some kind of pre-visualisation, defined in Maya, comprehensive of the camera's movements, light origins' directions and characters following choreography indications, to be transferred, once approved, by the animators. Almost 35 animators worked on Robots. In the beginning, the choice was to animate the characters as if they were real machines, without any metal deformation but later on, using the "squash and stretch" application, it became more important in front of the audience that, even if for its own nature, it has a lack of real life where just the movement itself can lead it into a dynamic state. This idea becomes more clear when observing the eyes. In an organic being, to open them wide causes the







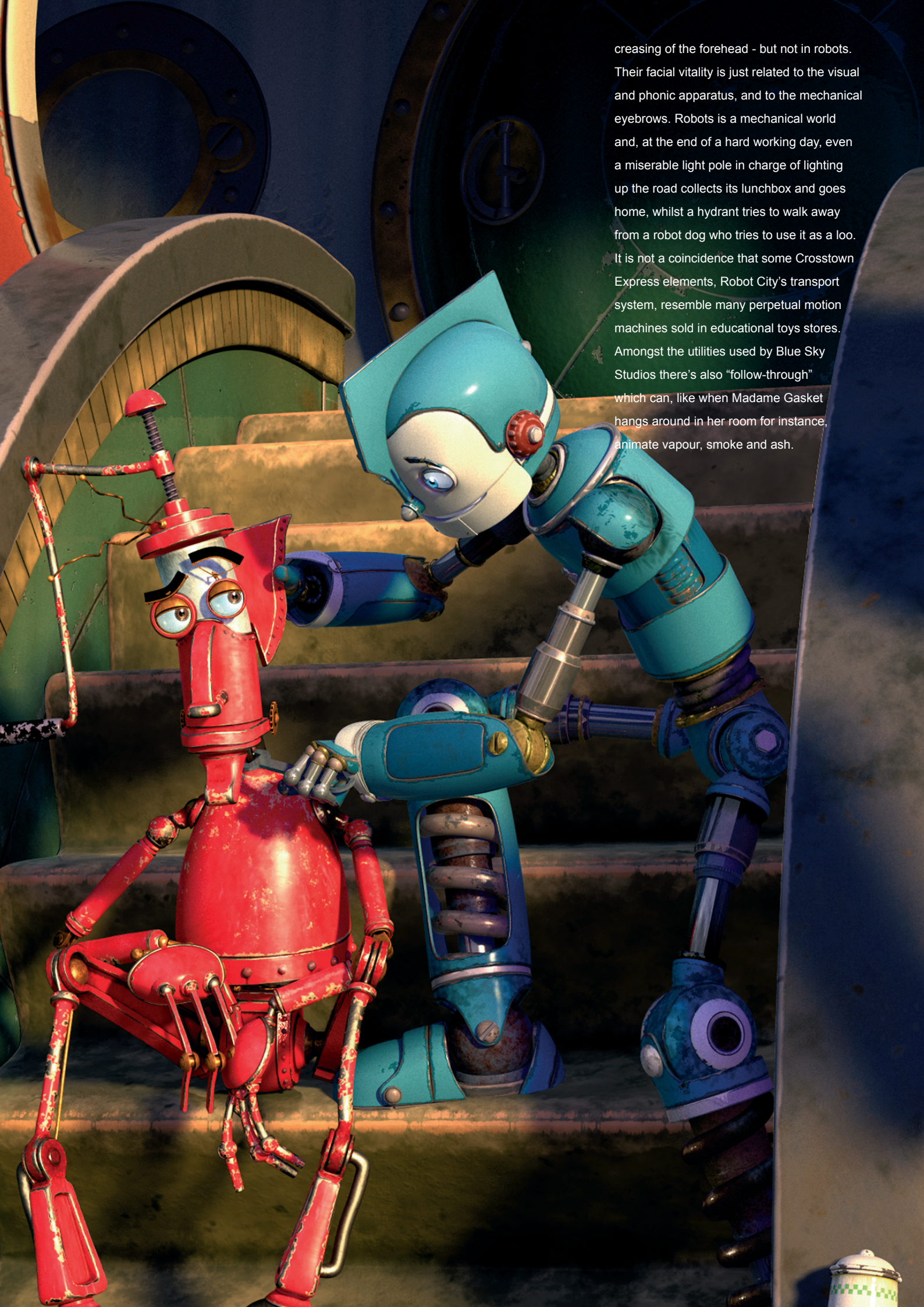




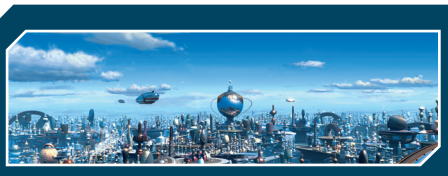






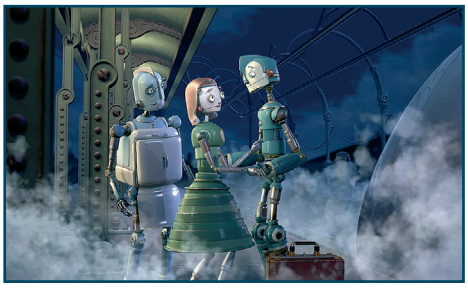


creasing of the forehead - but not in robots. Their facial vitality is just related to the visual and phonic apparatus, and to the mechanical eyebrows. Robots is a mechanical world and, at the end of a hard working day, even a miserable light pole in charge of lighting up the road collects its lunchbox and goes home, whilst a hydrant tries to walk away from a robot dog who tries to use it as a loo. It is not a coincidence that some Crosstown Express elements, Robot City's transport system, resemble many perpetual motion machines sold in educational toys stores. Amongst the utilities used by Blue Sky Studios there's also "follow-through" which can, like when Madame Gasket hangs around in her room for instance, animate vapour, smoke and ash.

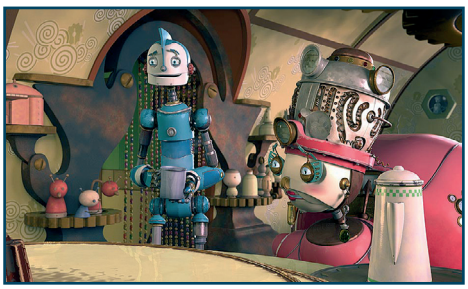






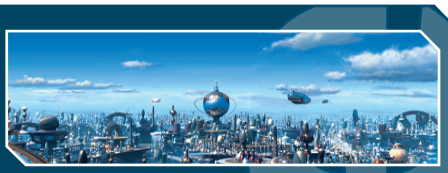








The stunning Robots' rendering and, above all, the metallic surfaces, are all done by the software owner 'CGI Studio'. It is undeniable that everything came to life as soon as it was lit up and rendered. There were no subsurface scattering effects to deal with but rather a whole environment to manage. It seems incredible, but by watching the different robots the different range of materials used becomes quite clear, because for some metals the reflection varies according to the eventual painting used and to the different stages. Mr. Copperbottom, Rodney's father, works in a restaurant kitchen as a dishwasher. His metallic apron seems to be in fact a fridge door, and the covering of the shoulders and legs are reminiscent of a painted vehicle body. With Rodney, it is possible to see the presence of several blue varnish layers, whilst Fender's metal appears violently eroded by external agents. Piper is neater than the rest of the 'Rusties', whilst Ratchet is the perfect cold manager prototype: no scratches, shiny and obsessed with order, cleanliness and style. Blue Sky Studios' Research and Development unit decided to remove the texture maps from the surfaces, usually developed with Adobe Photoshop, by using a metal rendering procedural solution in order to save time and RAM memory. This was a Maya nodes network based system which was able, for instance, to work with multiple painting layers. Robots' rendering success has CGI Studios to thank (with non-stop evolution since 1987) for the remarkable calculation ability. Raytracing is a rendering technique used for 3D scenes that traces the distance of each light beam, right from the source and until it becomes weak light, in order to have any visible effects. In the 'renderfarm', built for the movie next to the Blue Sky Studios, were almost 500 48-bit AMD and Xeon processors (able to render each single frame in 6/7 hours), 200 Linux workstations and 150 Mac and PCs. The system, in other words, knew the light beams' origins which had to be hit and the rendering areas. CGI



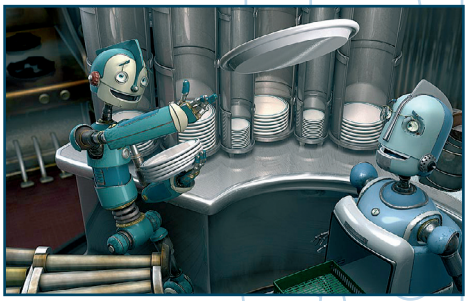
Studio rendering has unified scenes' geometric elements, Z-axis depth, surface properties (quite reflective in Robots' world), lighting setup and the rendering method, creating the complete final frames and the stunning results which can be seen on screen. Seen for the last time in action, Star Wars Episode III (True? There are already rumours about a 3D version of the saga) droids, and many other fantasy movie robots, have generally always been related to humans as either "enemies" or "friends". In Robots, the human beings are totally void - creating a new visual idea - and the real strength is in the CGI animation milestone, signed by Blue Sky Studios.

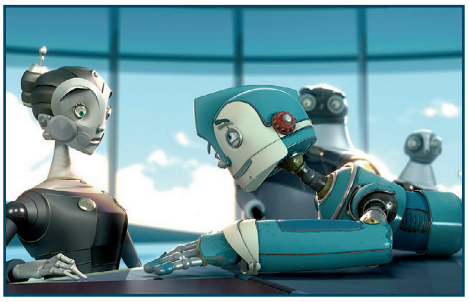
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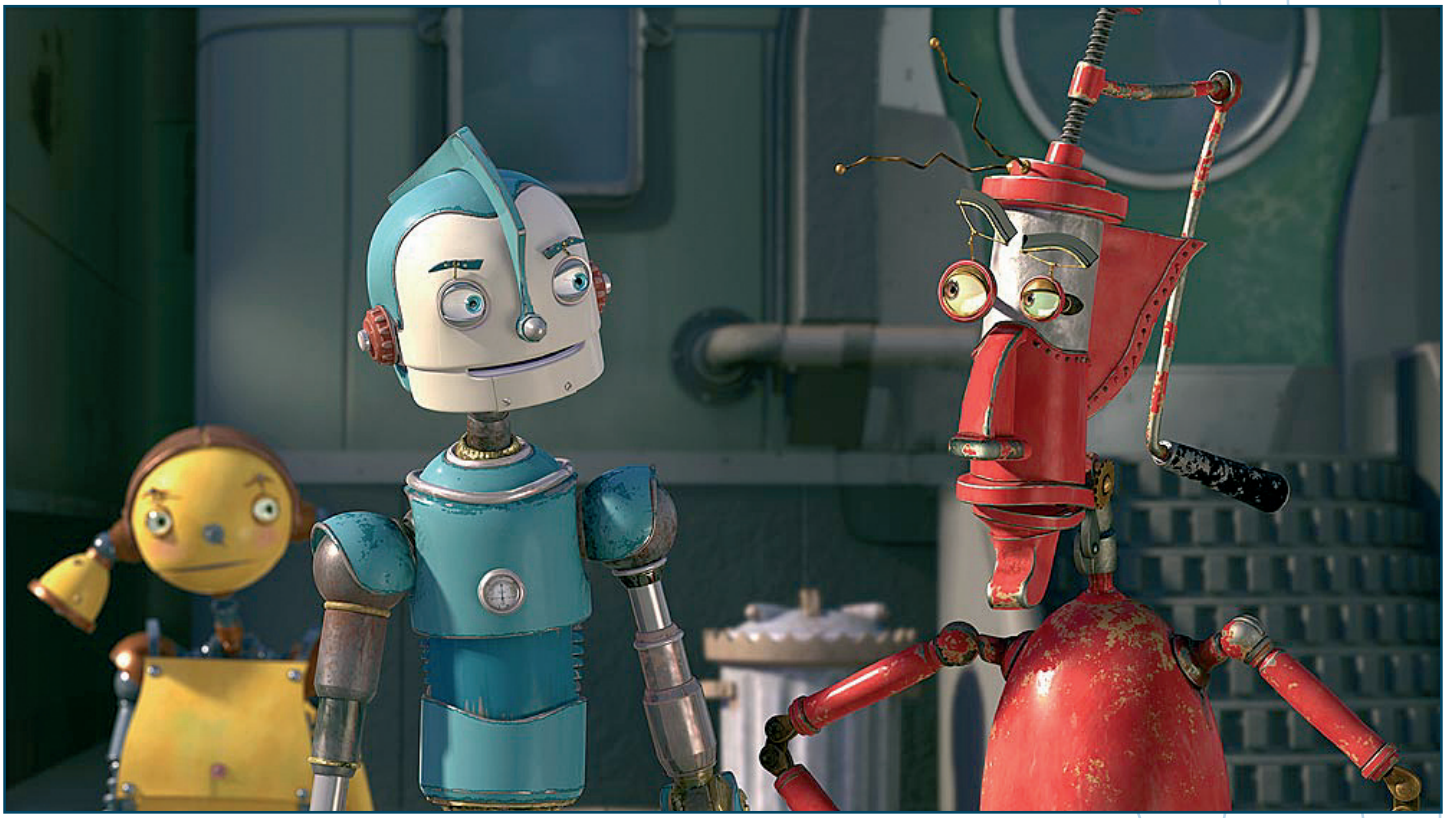


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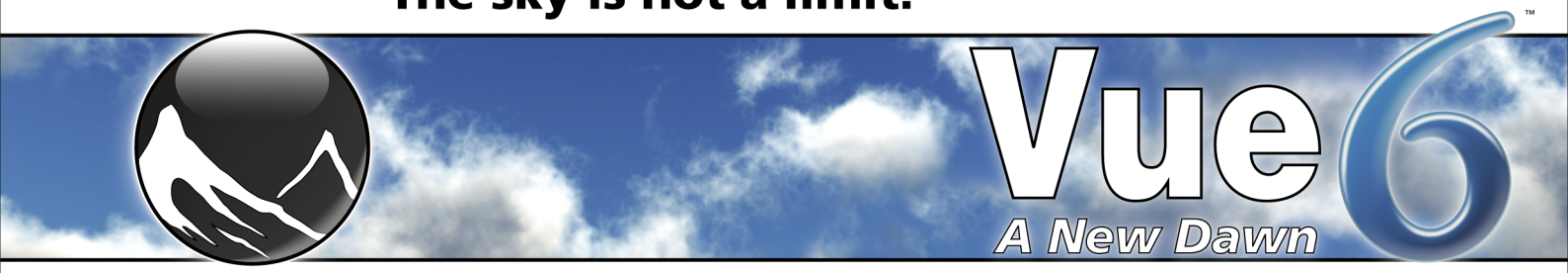
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Aten Skinner, lead artist at Team17, gave us an exclusive look behind the scenes for the PSP remake of Lemmings, the Cult Classic game which not only proved a point in character design, but even had to have its own genre named for it!...









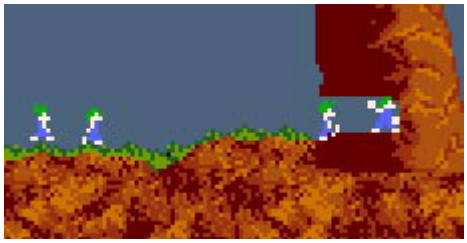


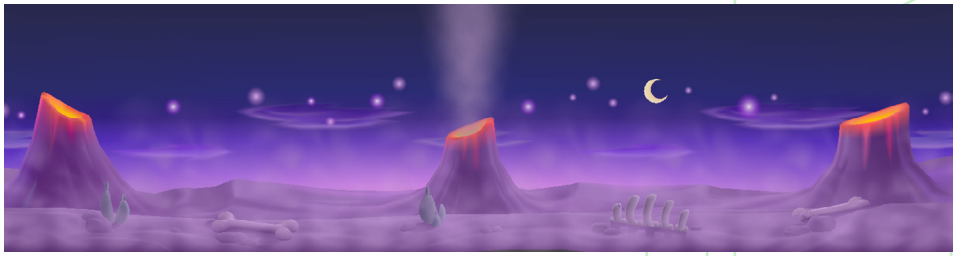


Lemmings, a computer game developed by DMA Design (now Rockstar North) and published by Psygnosis in 1991, was one of the most popular computer games of its time. Several games magazines of the time awarded the game maximum review scores. Psygnosis, also known for the 'Wipeout' series, had its greatest success in Lemmings. Famously, the concept for Lemmings came from an animation created by Mike Dailly over a lunchtime, to prove a point about how small a character could be on screen. At the height of the popularity of Lemmings, Eric W. Schwartz, the most famous Amiga animator of the time, created the anti-lemmings demo, where Lemmings were shot in humorous ways. Lemmings fans' stories from the community (http://www.lemmingsuniverse.net/) are numerous, and humorous stories include the idea of being born from cabbages due to their hair, and an 'evil lemming' spin off that involves farmers being chased by lemmings with pitchforks. The game was unique and based around a concept previously untried. In the original Commodore Amiga version, there are 120 levels where, on each level, the player must guide a group











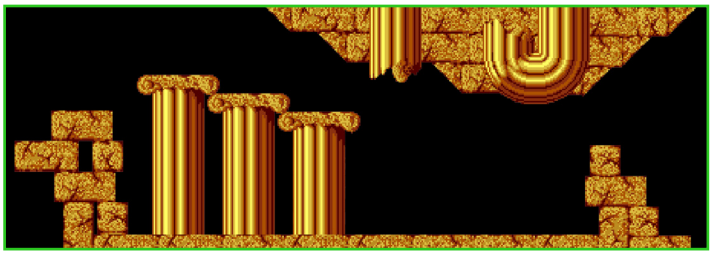


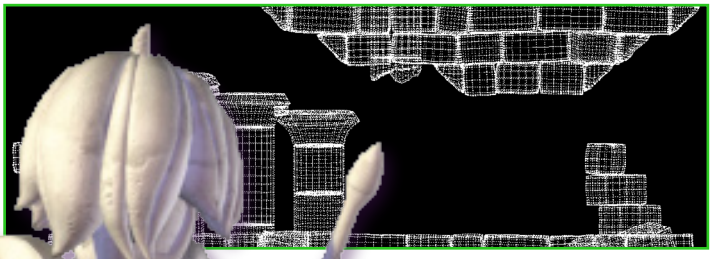




of up to 100 lemmings (80 lemmings in many versions, such as DOS and Windows) home by giving individual lemmings various commands. The “lemmings” of the game are small, green-haired humanoid beings that mindlessly walk “en masse” into any danger in their path, following the popular myth that real lemmings behave in a similarly suicidal fashion. Of all the numerous sequels, the only one to achieve the success of the first was ‘Lemmings 2: The Tribes’, which added twelve specialist tribes of lemmings, each with their own type of level and specialist workers. The game briefly gave rise to a new genre, described in magazines at the time as the “save ‘em up”, a joking reference to other popular genres like “beat ‘em up” and “shoot ‘em up”. In March 2006, Sony released a remake of Lemmings for the PlayStation portable handheld console, developed by Team17. It features all 120 levels from the original game, 36 brand new levels, as well as DataPack support (similar to the Extra Track system featured in ‘Wipeout Pure’), and a “UserLevel” Editor. Every level in the game is a pre-rendered 3D landscape, although their gameplay is still 2D and remains faithful to the original game. UserLevels can be constructed from pre-rendered objects, in a similar manner to unofficial level editors such as ‘LemEdit’ for DOS Lemmings and ‘LemmEd’ for Amiga Lemmings 2: The Tribes. UserLevels can be distributed by uploading them to an exclusive Lemmings online community. We spoke to Team17, responsible for bringing back this unique game format to a new generation of portable game users and proving that gameplay has not been completely lost in a sea of special effects and visual tricks. During their 16 years of operation they have created over forty titles and over 130 releases on 16 gaming formats. Team17 are well respected for their approach, autonomy, attention to gaming detail, professional discipline and also for being “good sports” after hours . They initially made their name self-publishing a number of Amiga titles back in





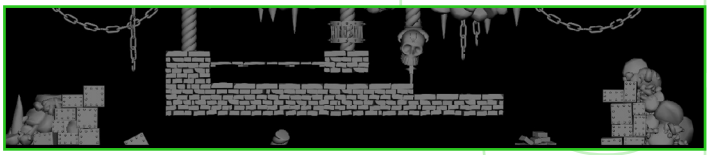




1995, which was a huge hit on all systems, making the UK number one in the 'All Formats' chart and going on to become one of the world's most sacred game-franchises, now in its 10th year with the release of 'Worms Open Warfare' in the spring of 2006. These days, Team17 are working with an impressive collection of top-line publishers, developing a range of both original IP and licensed video games on an exciting range of systems and platforms. They also have a veritable treasure chest of classic IP that they are currently licensing and looking for licensors on a range of platforms. Aten Skinner, lead artist on the Lemmings PSP remake, helped 2DArtist magazine out with a few questions, and also gave us access to some of the wonderful artwork from both the concepts and final gameplay for all you budding game concept designers and enthusiasts out there...





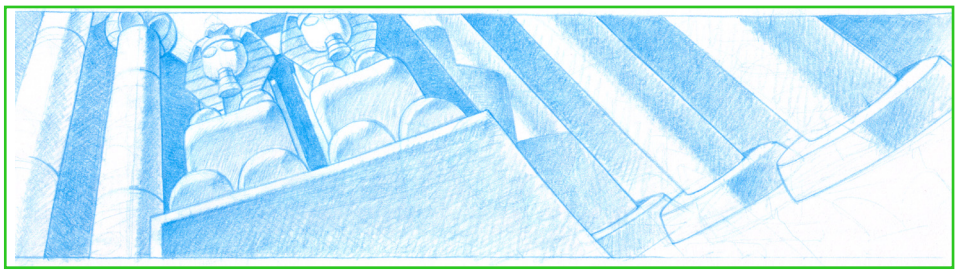




the early 1990's, with titles such as 'Alien Breed', 'Project-X', 'Superfrog' and 'Body Blows' to name but a few. Currently, Team17 have approximately 70 staff and are developing titles for current, next-gen, digital platforms and handheld technology, and are constantly looking for the right talent to join them. Their major breakthrough title was Worms, released in











I have heard a cool story about the birth of Lemmings: apparently it was a bet to prove how small a character could be when displayed on a computer screen. Any truth in this?

As far as I know, it is a true story. In fact, I've seen the original character sheet which is basically an animated .gif with a bunch of traps and early incarnations of the lemmings which have been drawn and animated. There is some really sinister stuff on there!

Using such a small space, screenwise, what was it like designing all of the different lemmings?

The method we used was actually nothing like the original animated sprite. For the PSP, we had a system where it was found to be much quicker to draw a group of textured polygons than loads of animated sprites. The lemmings themselves are made from a very small texture page mapped onto about 15 flat polys, like a



paper cut-out. This made it harder to do some things and easier to do others, but I'd say it was probably about a 50/50 trade off in the end!

How did the concept art of Lemmings progress?

It was actually really fun to do this part. Obviously, as we were recreating all of the original levels, we had to stick exactly (more or less to the pixel) to the original layouts of the levels. What we would do then is look at the old levels and work out what we needed to model to remake them exactly – but then we could go a bit madder around the edges of the playfield where you can't get to, or over the tops of solid land masses. We designed the backdrops to complement the foreground and give them more of a "setting".

Why was the decision made to leap from the 2D to the 3D gamespace?

When you're looking at the game you're looking at a total mishmash of techniques! For example, the playfield had to be 2D - anything else would have made it impossible to play. So, all the levels were made either in Maya or Photoshop, or usually a little of both, and saved as a large texture. The lemmings and traps were all textured cut-out polys, totally flat. The backgrounds are really the only 3D element in the scene, and this was just to give a bit of depth.

What one piece of advice would you give to any aspiring games concept artists?

Be really good at drawing! There's a lot of competition in this field, although I don't class myself as a concept artist by any means. We have guys here who are just awesome, so if you want to be taken on strictly as a concept guy you have to be very flexible. You might go from one day drawing in full cartoon style to having to do sci-fi the next. The only way to do that is to practice, find your own style, but be prepared to adapt it to whatever sort of project might come your way. There's so much to learn it's daunting, but you need to know perspective, anatomy, colour theory, linework and most of all have a great imagination! You can be as technically gifted as they come, but without any ideas backing it up your work will lack individuality and interest.





Team 17

More Details can be found at

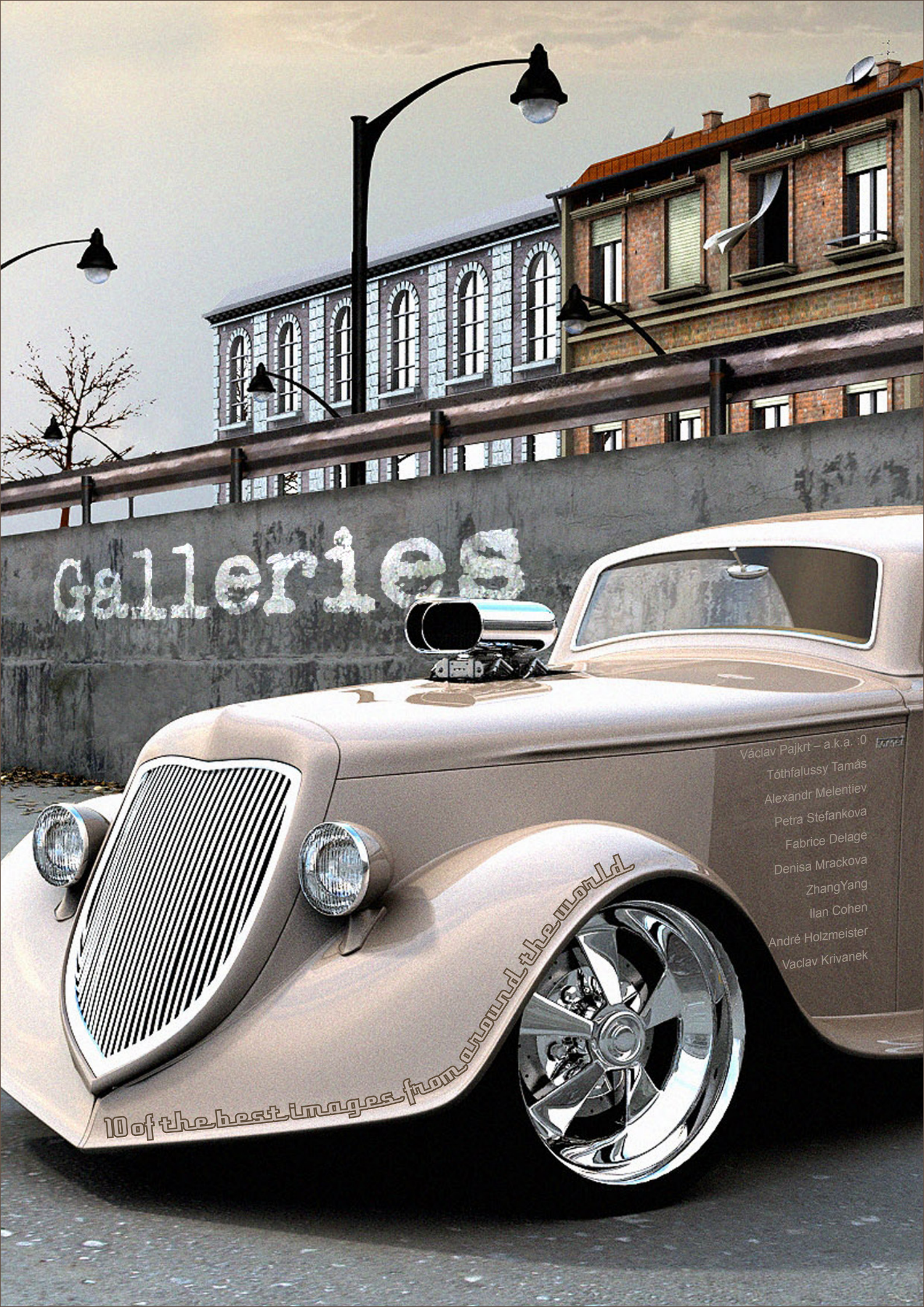
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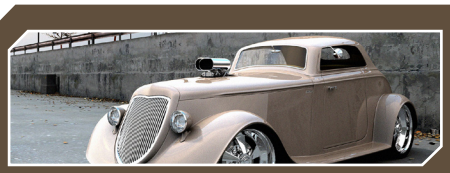
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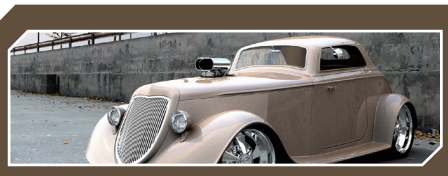
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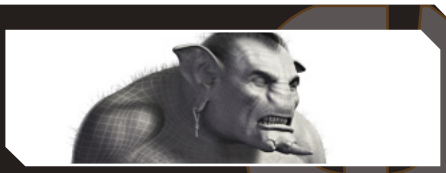
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Modeling a Character for Animation

Using the latest methods, and a little help from 3DS Max and Z-Brush, see how Nicolas Collings created his highly detailed 'Trarch'...



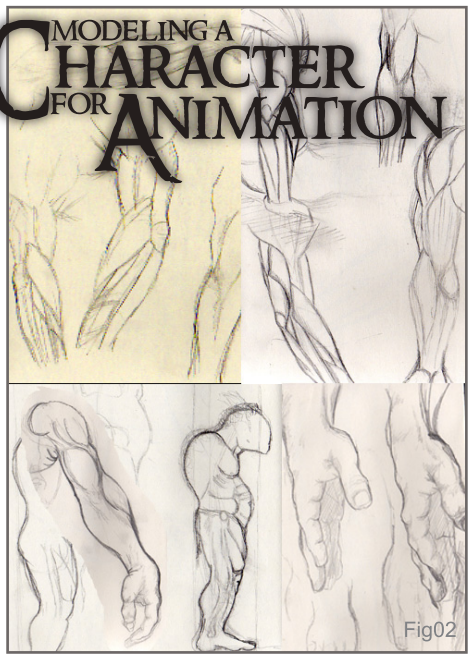
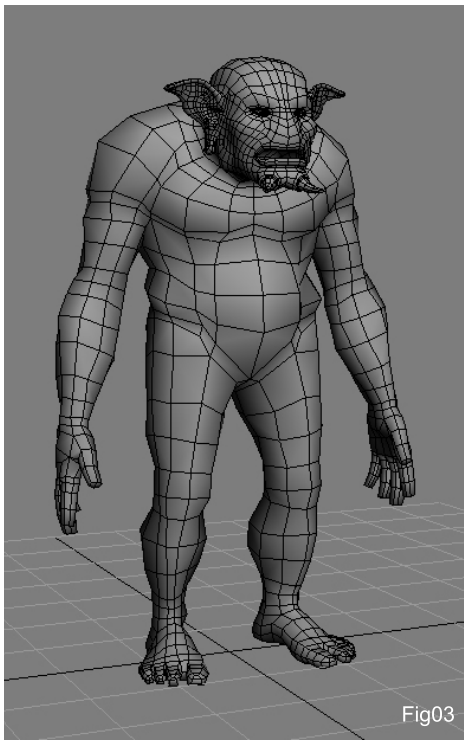
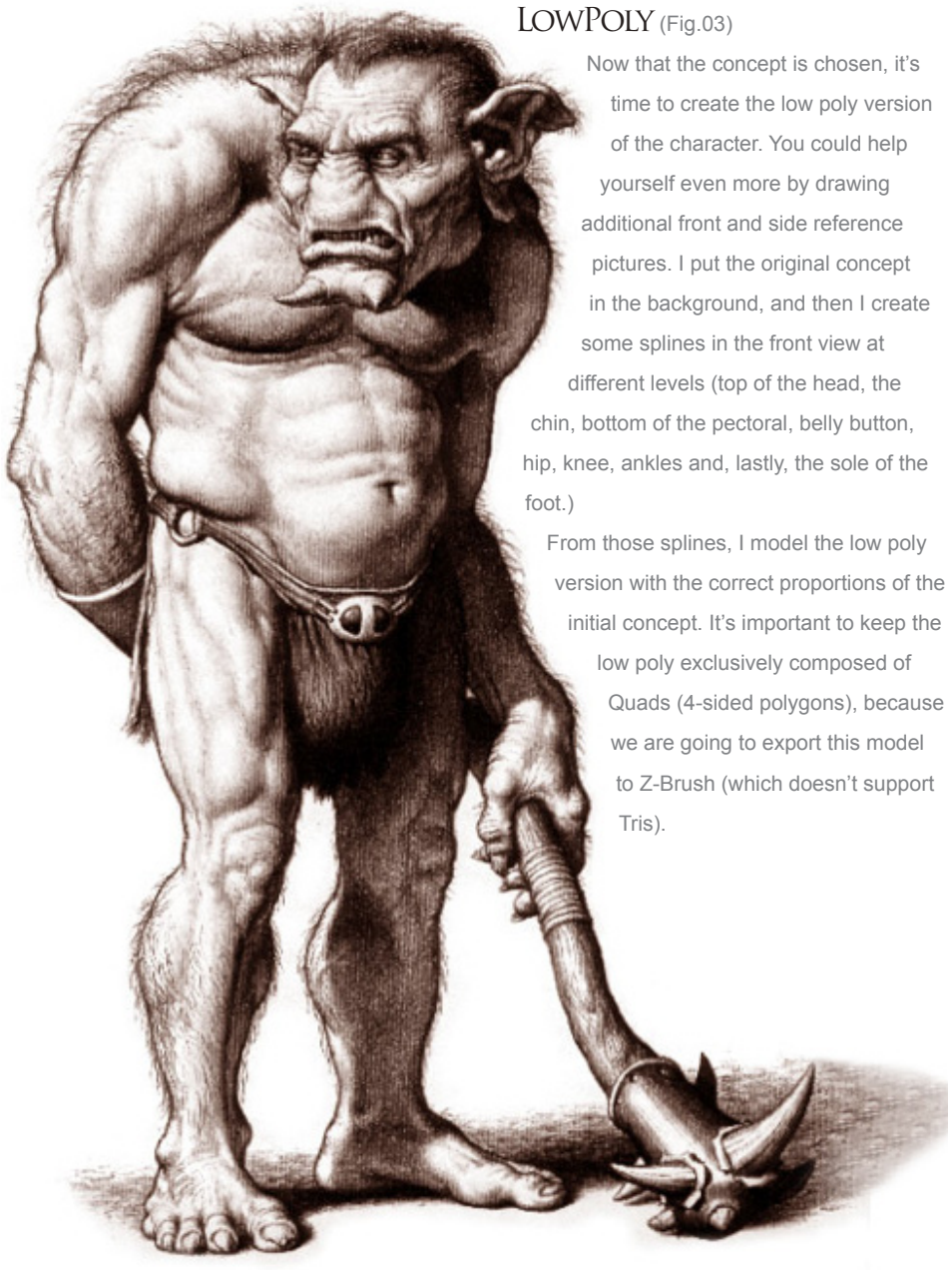


Fig02

In this article, I'd like to present the making of my new character, 'Trarch'. The workflow used to create this character is an up-to-date creative process. That is to say that the modelling phase will use digital sculpting software (Z-Brush), and afterwards I'll work in 3DS Max to retopologize the sculpted model and create a friendly animation mesh. So let's begin…


Fig03


Fig01

Reference

The first phase consists of finding a design for the character. I decided to choose a concept created by concept designer Miles Teves (Fig.01). **Beware:** Don't forget to ask authors for their permission. Once the concept is chosen, I can begin to draw some sketches on paper to have a more precise idea of the model (Fig.02). This step is really important for me; it allows me to feel more confident when starting to model, because I have already thought about the way things need to be created (anatomy, muscles position, etc.).

LowPoly (Fig.03)

Now that the concept is chosen, it's time to create the low poly version of the character. You could help yourself even more by drawing additional front and side reference pictures. I put the original concept in the background, and then I create some splines in the front view at different levels (top of the head, the chin, bottom of the pectoral, belly button, hip, knee, ankles and, lastly, the sole of the foot.)

From those splines, I model the low poly version with the correct proportions of the initial concept. It's important to keep the low poly exclusively composed of Quads (4-sided polygons), because we are going to export this model to Z-Brush (which doesn't support Tris).

Z-Brush – Model and Interface Preparation

With the low poly mesh finished, it's time to export it in .obj format. Be careful to have Quads selected as the type of faces and not Tris. Now we have a new .obj file that we are going to import into Z-Brush (Tool – Import). Click and drag to get the object in the viewport, and directly press the "T" key to put the object in draw mode. Next, I define the polygroups (Fig.04&05). Creating polygroups allows you to





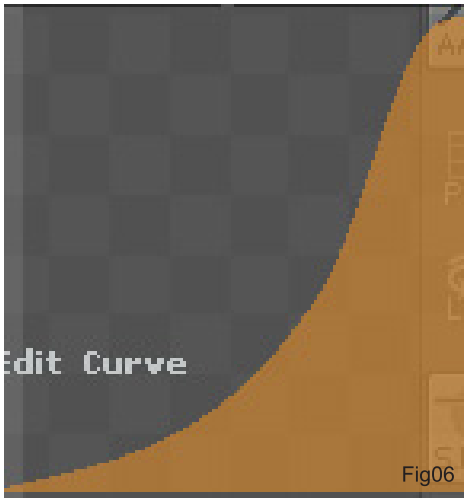
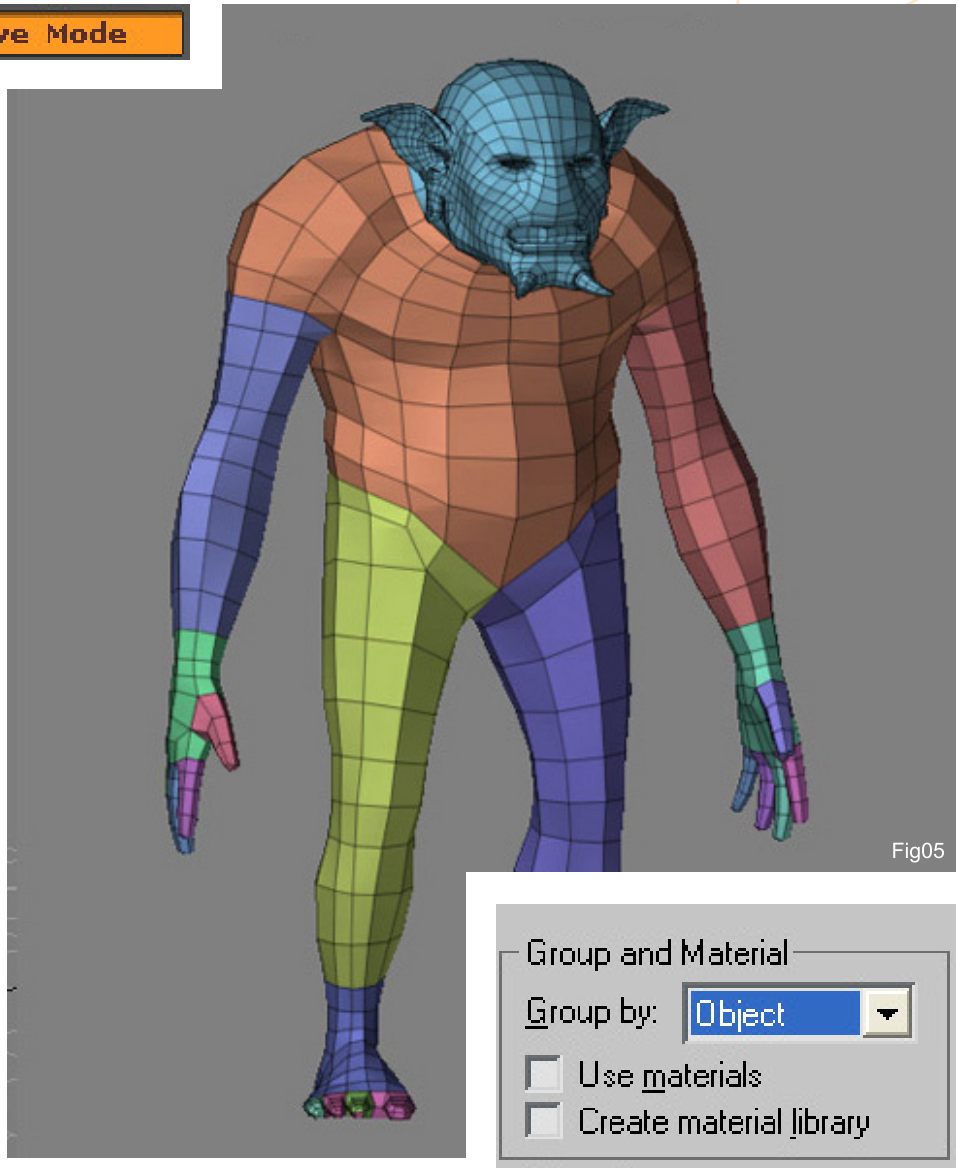


Fig06

quickly isolate a part of the model to work on in a more efficient way. Moreover, when we have a high level of subdivisions, it allows the computer to work faster. So, to create a polygroup, you have to isolate a part of the mesh. To do that, keep pressing Ctrl + Shift, then click and drag on the part of the model. When you have isolated a part, you need to click on Group, visible in Tool – Polygroups. The isolated mesh takes a different colour. Repeat this step for each part of the model. To isolate a polygroup, press Crtl + Shift and click on the desired part. Two little things remain to be set up before we start to sculpt the model. The first one is to modify the mouse average value to 5. That allows a better flow of the stroke (stroke = mouse average). The second is to modify the attenuation curve and to activate the accurate curve mode (transformation – modifiers) (Fig.06).

Z-Brush - Sculpting

Now things start to get interesting. One of the basic things to keep in mind when you sculpt in Z-Brush is to always work each level of subdivision in depth, before going onto the next subdivision level. You should focus on the volume first, which is very important because if the masses or proportions are wrong, all the details you'll sculpt will add absolutely no


Fig05

realism. At a lower level of subdivision, I work on the full character at the same time. Then, once the shapes are correct and the main masses are in the right place, I work individually on each part. I start working on the torso, then the arms and the hands, followed by the legs and the feet and, at the end, the head (Fig.07a-e). During this step, I often jump between Z-Brush and 3DS Max to check the proportion of the sculpture with a good camera perspective. At the end, I check the whole model. You don't need to go too far into the detailing because we are going to retopologize the character to have a good mesh for animation (Fig.08).

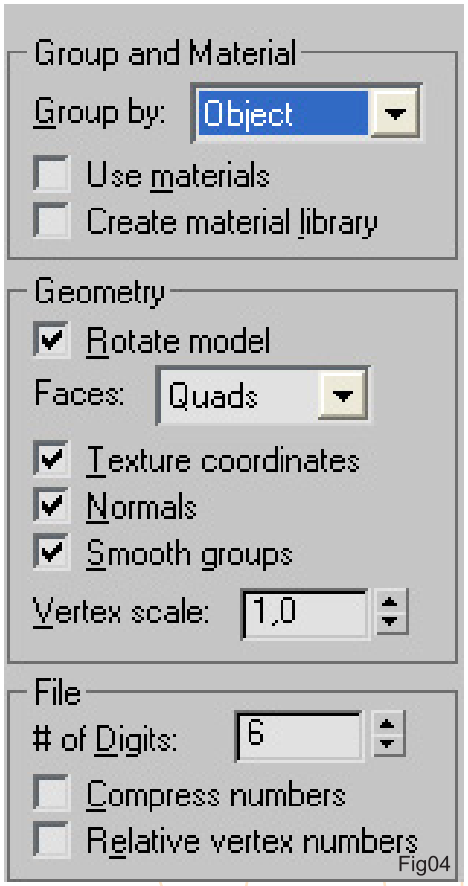


Fig04

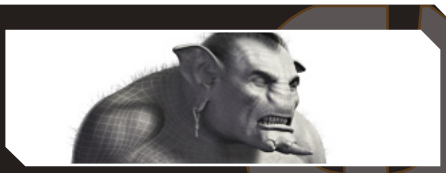



Fig07a


Fig07b

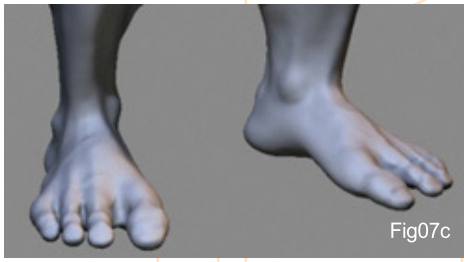

Fig07c


Fig07d


Fig08


Fig07e

Retopology

So, now I'm going to build a new hi-resolution mesh. Why? Well, firstly to have total control over the flow of the topology, but also because I'm going to use Brazil as the render engine and this doesn't deal with the micro-displacement. I'm going to use a normal map to have details, like the veins or the wrinkles on the skin, which I will talk about later. To retopologize the Z-Brush model, I proceed in several steps, working step-by-step and starting by importing the torso in 3DS Max. To retopologize,

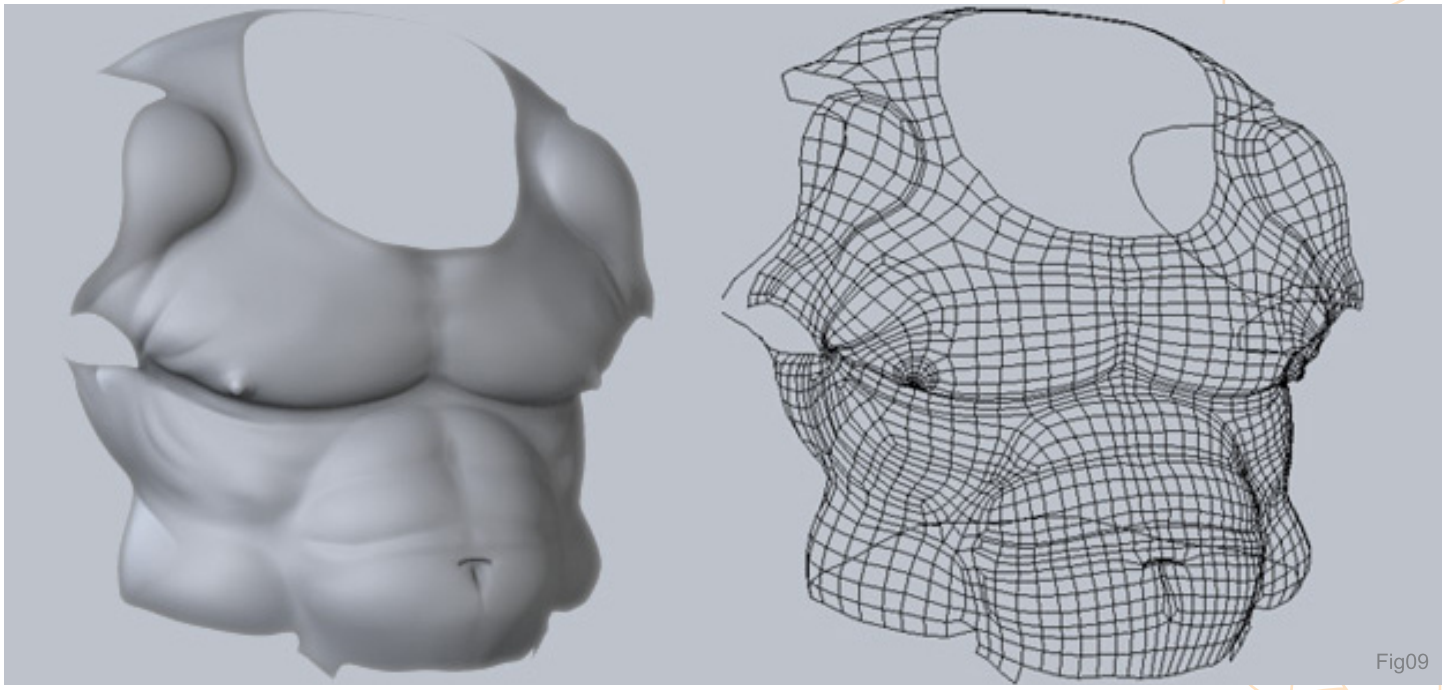


Fig09

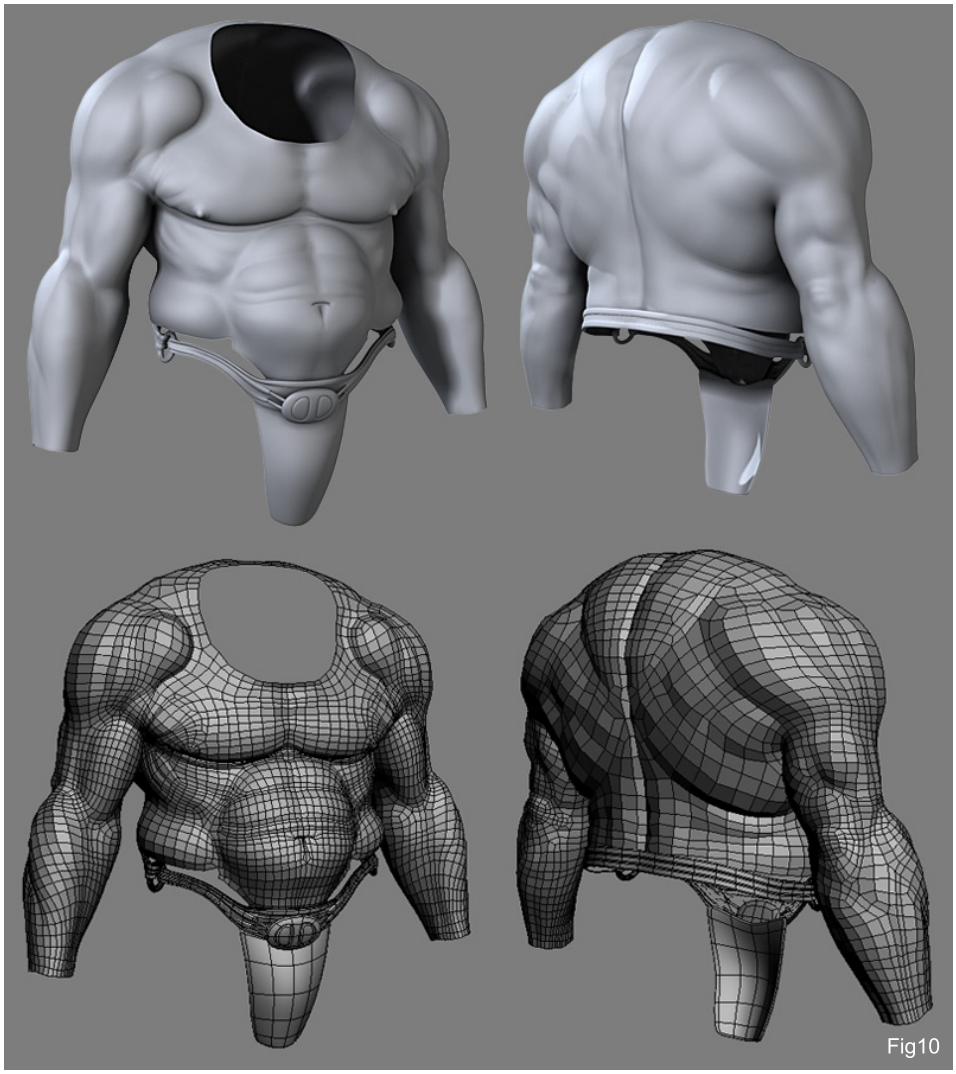
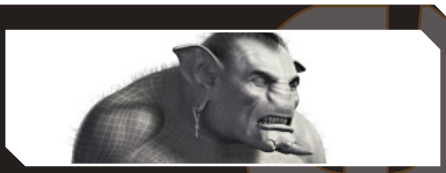


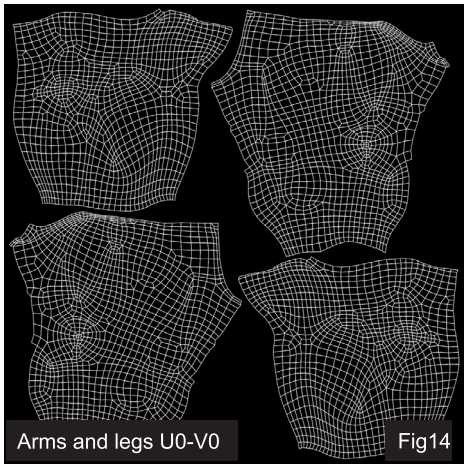
Fig10

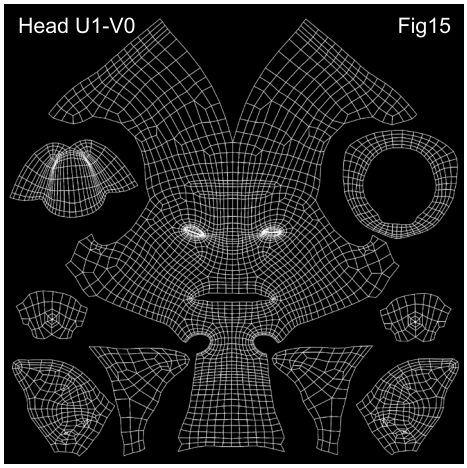
I use a plug-in called “Polyboost”. With this tool, I can rebuild a new topology over the Z-Brush model very fast and efficiently. I first became aware of the power of Polyboost when I saw the Gnomon DVD by Ian Joyner (you can find the DVD at this link www.thegnomonworkshop.com). Once I have finished rebuilding the torso (Fig.09&10) (you only need to rebuild one half of the model because we can use a symmetry modifier for the other half), I delete the Z-Brush mesh and keep the new torso. Then I import the arms, and I restart the previous step, keeping aware to have the same number of vertices in the intersection of the 2 parts (here, the neck). I then delete the Z-Brush arm and I weld the new arm to the torso. Then I repeat the process for the other parts until my character is complete. For a preview of the way Polyboost works, you can download some videos from the official website (www.poolyboost.com). I also decided to remake the hand completely, because I didn’t like those on the Z-Brush sculpt. It’s very important to keep a mesh composed exclusively of Quads and evenly spaced. If you have to put a tri somewhere, do it in an appropriate area (unnoticeable), like under the arms or inside the mouth. The rebuilt wireframe mesh can be seen in Fig.11&12.

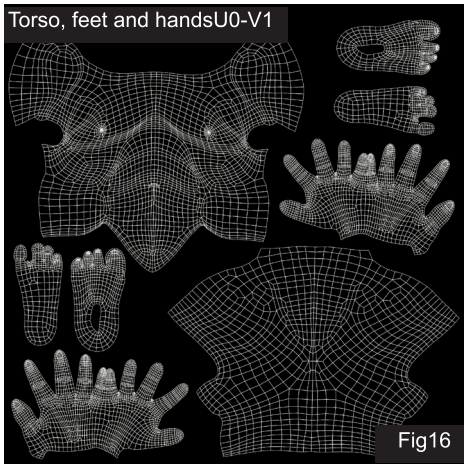


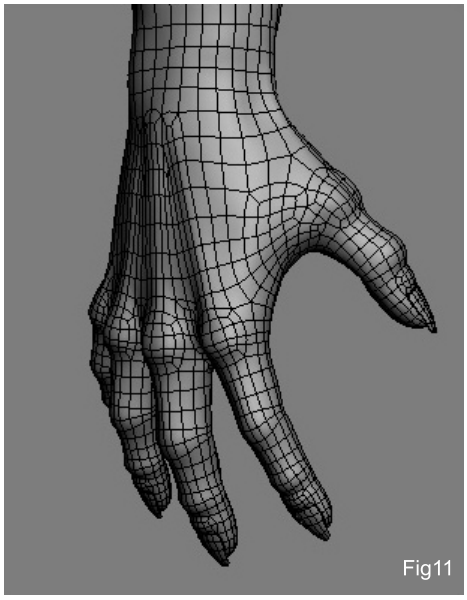
UV Unwrap

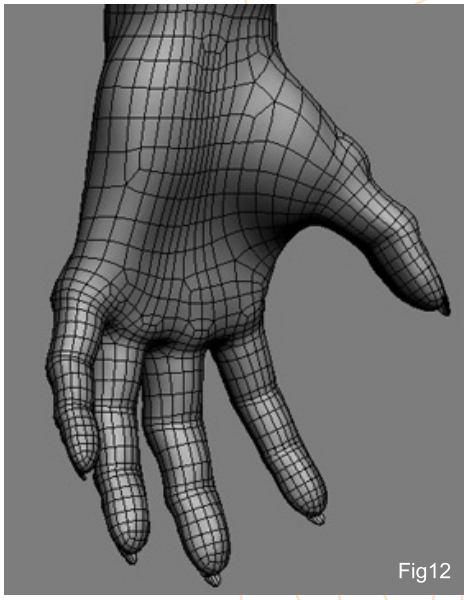
Regarding the UV, I prefer to use different space UV's and to not have to use a material ID for the SSS shader, as this could create some artefacts in the render. Having an evenly spaced polygon mesh makes unwrapping easier. Fig.14,15&16 show the UV's of the body unwrapped on 3 different UV spaces.

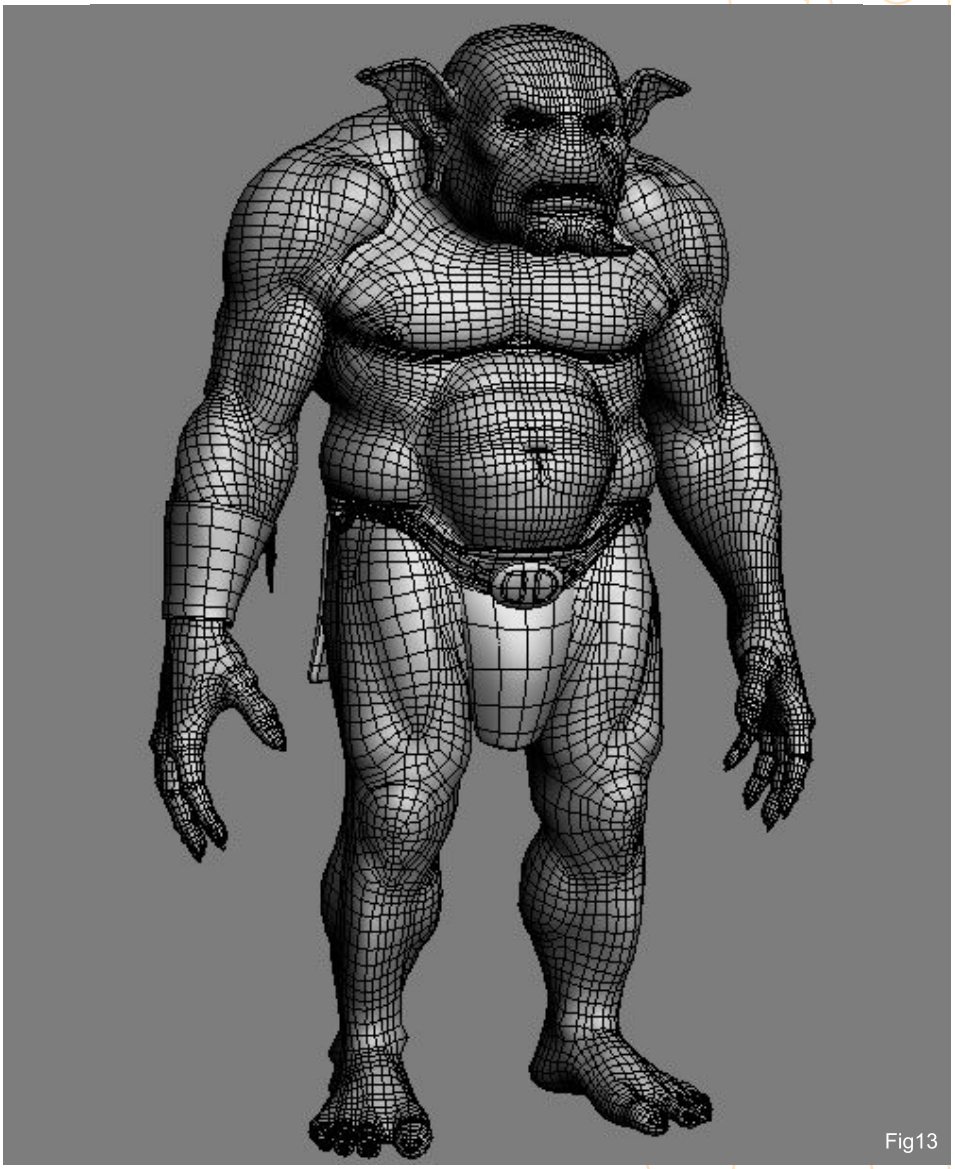


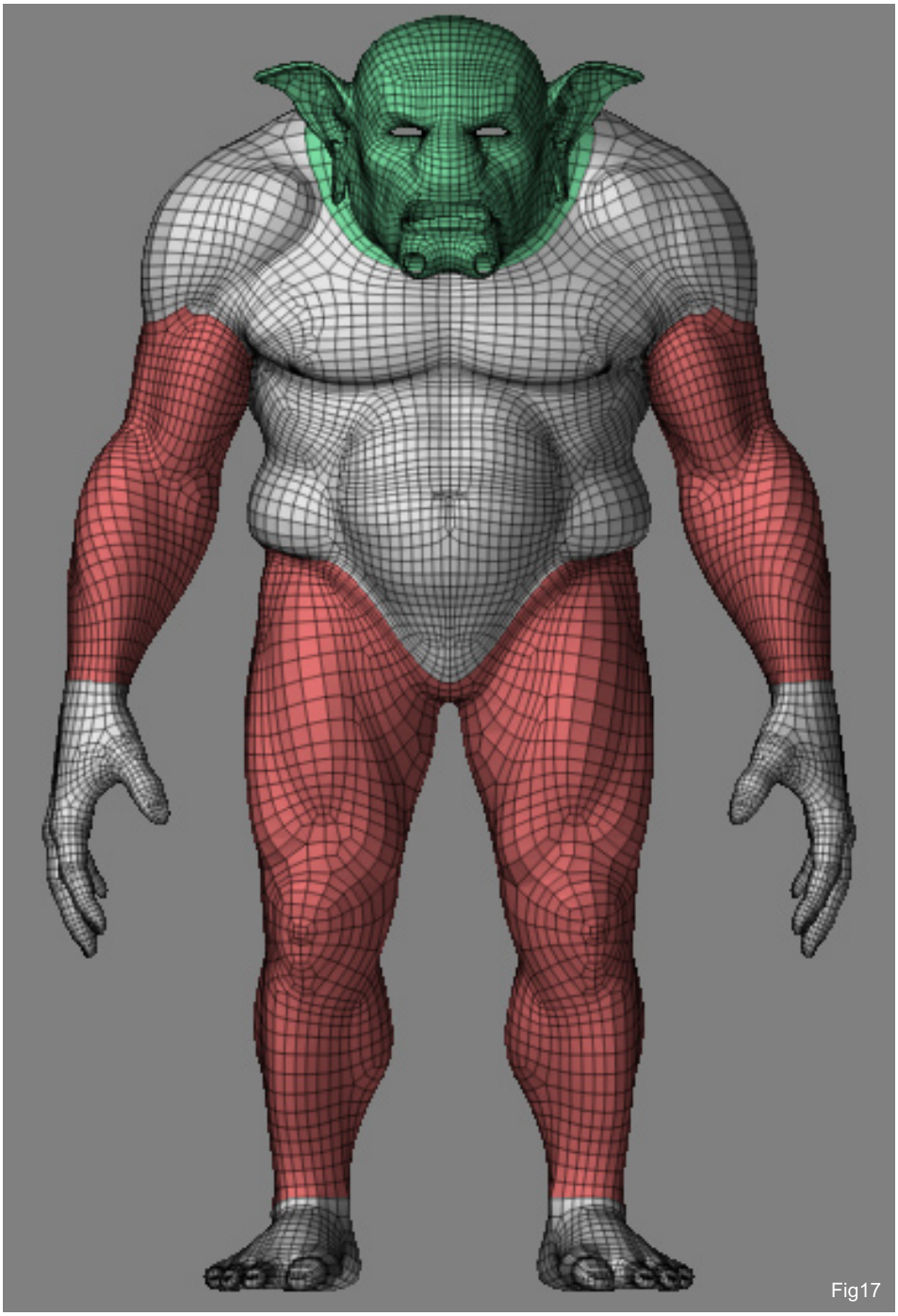


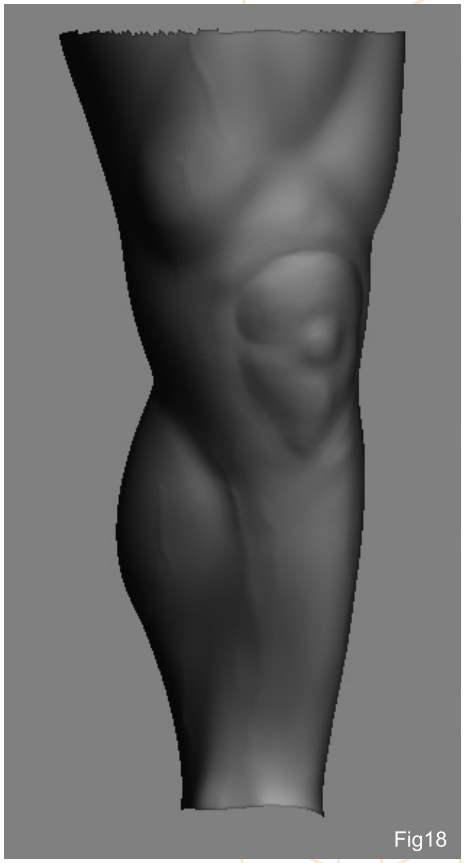


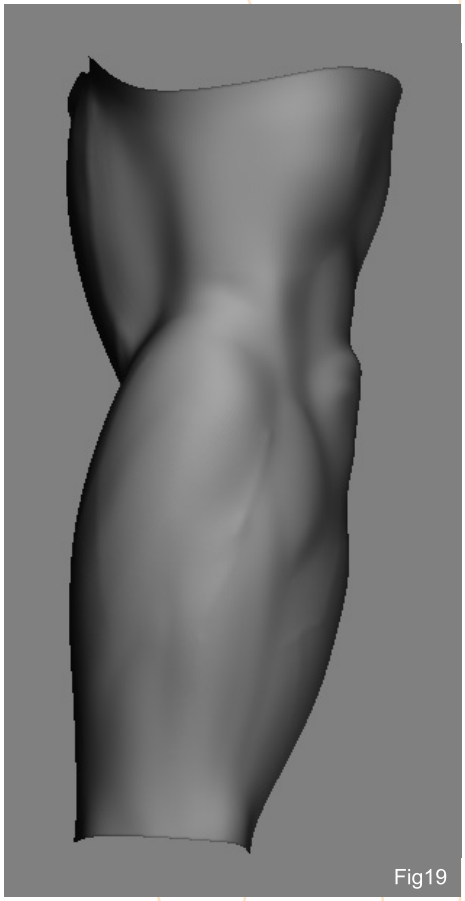






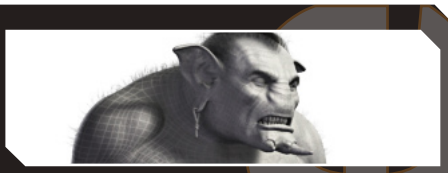

Fig17


Fig18


Fig19

Finalisation in Z-Brush

Once the UV's are unwrapped and laid out in their respective UV space (Fig.13), it's time to import the new model into Z-Brush so that we can proceed with the finalisation of the character. The first thing to do is to click on the UV Groups button in order to distinguish the polygroups according to the UV space (Fig.17). Next, we can isolate a part and start to sculpt the details, rework the muscles, the mass etc. (Fig.18&19). As soon as the sculpture is finished, I move onto the creation of the bump map. It allows adding some finer details without increasing the poly count. To do that, you need to select another shader: the bumpviewer (material - load) which you can find in the Z-Brush folder. Next, you need to create a grey texture (126). At that moment, you have the



possibility to paint the bump directly onto the model with a real-time feedback. To create the bump, I mainly use “projection master” and I use some custom alpha brushes (Fig.20). As there are three UV spaces, you need to paint a bump map for each space. Eventually, you will have 3 bump maps.

Exporting normal map

Z-Brush can’t export multi-normal maps all at once (but it’s possible with displacement maps - you can do it with a plug-in called multi displacement on www.Z-Brushcentral.com). We have to isolate each part, one after the other, to extract its corresponding normal map. To extract a normal map you need the plug-in ‘Zmapper’, which you can find on Z-Brushcentral.com. Fig.21 shows the final result after rough skinning.

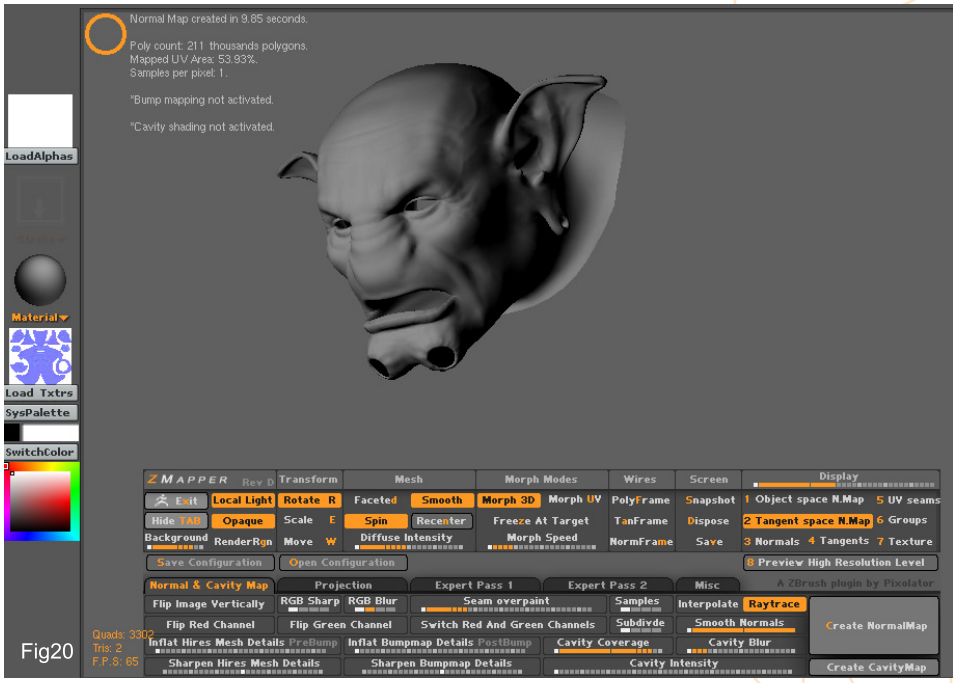


Fig20

Nicolas Collings

For more work from this artist please visit:

http://sillord.free.fr

or contact:

ncollings1@hotmail.com


Fig21



Pixologic

makers of ZBRUSH

Full-featured stand-alone illustration package. Sculpting, Texturing and Displacement/Normal map generation features also make it perfect for animation pipelines. More than a paint program, it's powered by a real-time 3D renderer and has intuitive organic modeling features that can reach millions of polygons. Add incredible detail to your CG work with ZBrush now!

Image by ZBrush Artist
- Steven Chen

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ZBRUSH



Ford Focus WRC Concept

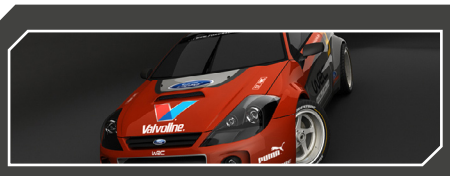
In this huge tutorial, Neville will show you how he made his funky coloured Ford Focus WRC edition, using 3DS Max and Mental Ray...

in partnership with:

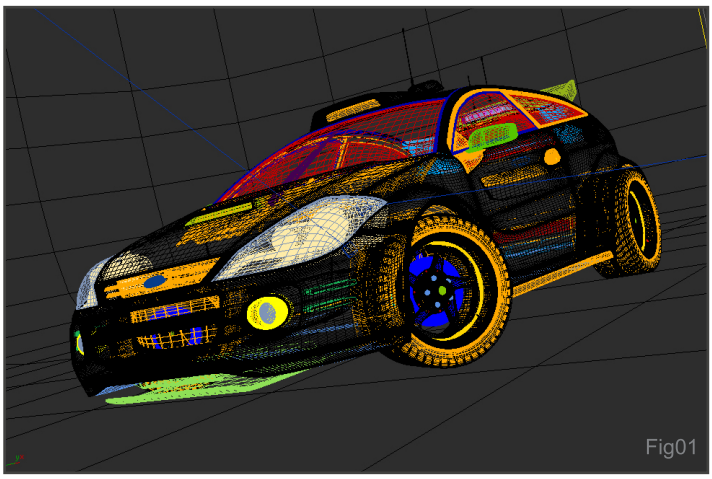
MY MENTAL RAY
Mental Ray Community

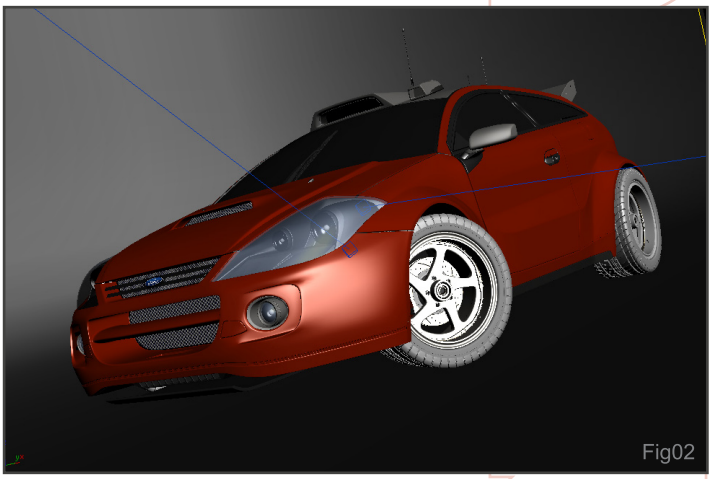
MYMENTALRAY.COM





Ford Focus WRC concept


Fig01


Fig02

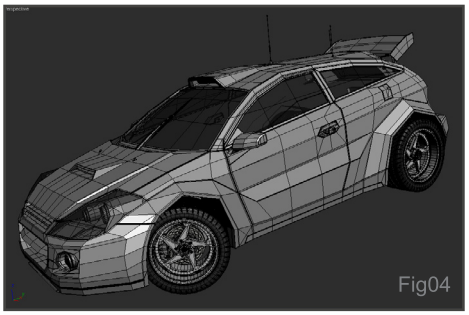
I am pleased to present to you all my Ford Focus WRC concept, created using 3DS Max 8 and rendered with Mental Ray 3.4, and brought to you by mymentalray.com. The design is not too high-tech, but I added a few extras here and there to make it look more appealing. I had to gather some reference photos to see what the car actually looks like in reality (the blueprint is a fairly old one) which helped a lot in getting the basic design. The new 2004 model looks real cool, so I had to make this one as a combination of both the old and the new, followed by the crazy colour combination which of course has certainly not been seen on any of the models to date. Why did I choose these colours? Because I wanted to make this model look absolutely different from all the rest! So let's begin...

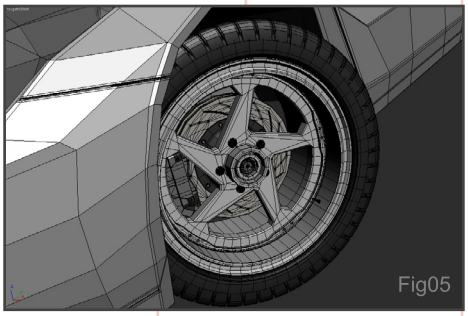


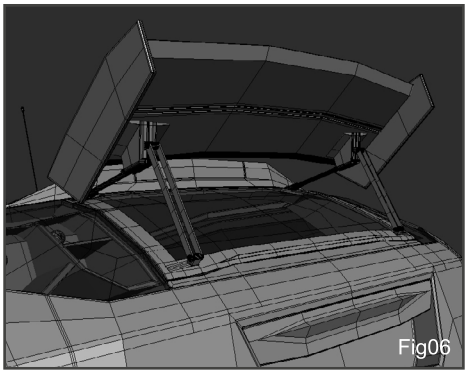
Fig03

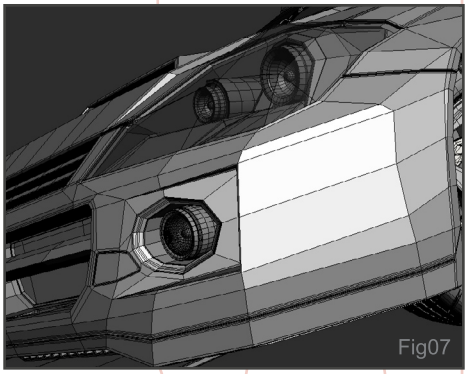
Modelling

I used subdivision polymodelling with no nurbs at all, lots of edge extrusions, chamfering, outlining, insets, subdividing and so on. It was tough, but worth all the effort. I was really scared when it came to detaching the different parts of the car, as I had to maintain the design 'flow' and didn't want any "blocky" sections. As you can see, the polygon count is an amazing 2236691 (Fig.01-07). My graphic card took a good beating when it came to 505 objects, which is mainly because of the tyres; the nuts,


Fig04


Fig05


Fig06


Fig07



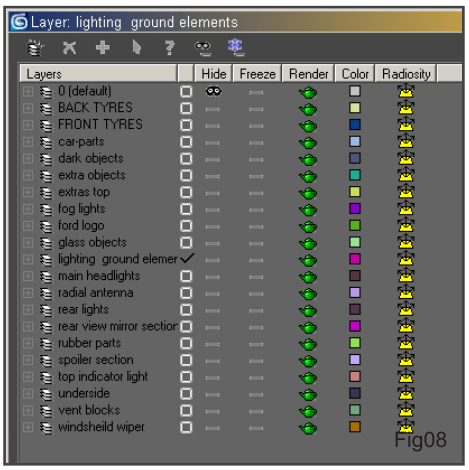


Fig08

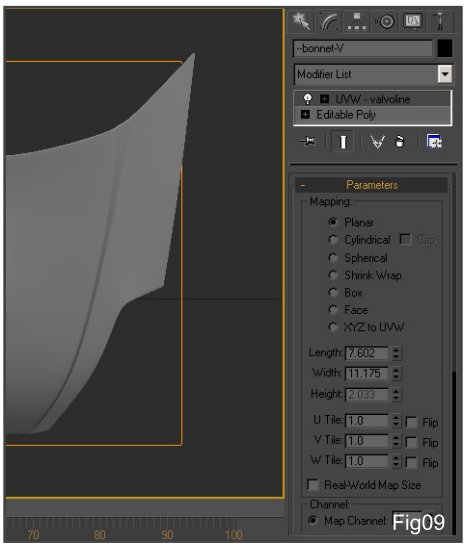


Fig09

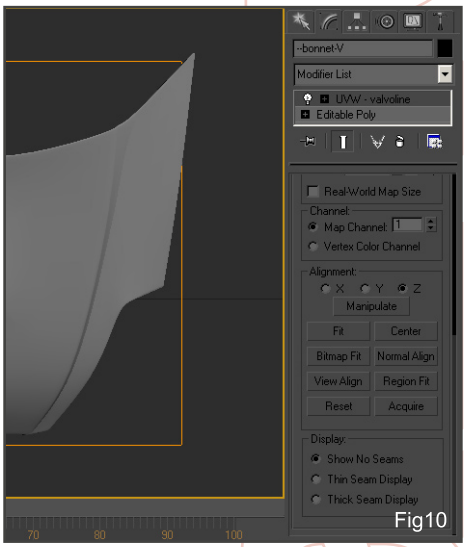


Fig10

bolts, calliper, disk brakes etc. The main shell cover of the car has a meshsmooth iteration of 3. There were a lot of problems during the modelling process; once the objects started to increase, so did the polygon count, then memory, then viewport display was slowing down, which of course meant that my graphic card wouldn't be able to handle it all, so there was one life saving option... I selected the group of components that had a higher polygon count and check marked the [display as box] option in the object properties dialogue. I also started to categorise the objects using layers, which helped a great deal whilst modelling, as I could hide completed components whenever I wanted to, thereby saving a lot of memory whilst working on the new sections of the car.It's just like using layers in Photoshop and Illustrator (Fig.08).

MATERIALS

The materials used here comprise of standard Max shaders and Mental Ray, for the outer shell of the model, rubber parts, tyres etc. Standard shaders were used, but for the glass objects, like headlights, bulb, rear lights etc., Mental Ray glass lume was used. As for the texturing, which is obviously the trickiest, painstaking task of all, I used the good old texporter, which is a very helpful plug-in for Max. Now, to mask all the decals (sponsors, numbers, paint strips etc.) I had to use the blend material. The map channel option was used extensively as well. Another addition to the group is the 'composite map' - this too is important. This tutorial shows you how to use these materials, and the map channel. For this, I'm going to use the bonnet object.

CAR PAINT MATERIAL & DECAL APPLICATION

As you can see in Fog.09, I've applied a UVW map modifier with the name "Valvoline" - it's important that you 'rename' the modifier so that it corresponds to the decal that is being used. Under mapping parameters, make sure 'Planar' is checked, and also make a note of the length and width values, as we will need this information later on. Next, set the 'Map Channel' value to 1. Moving on (Fig.10), set the alignment to Z and don't forget to click the 'Fit' button. Open up Photoshop, click file > new > change the units to inches and enter the length and width values that were mentioned earlier. Then change the units to pixels, and again make a note of the new values. Going back to Max, go to utilities > Texporter and enter the new values, as shown (Fig.11). Click on 'Pick Object' and select the mesh, then you should end up with something like Fig.12. Using this wireframe image in

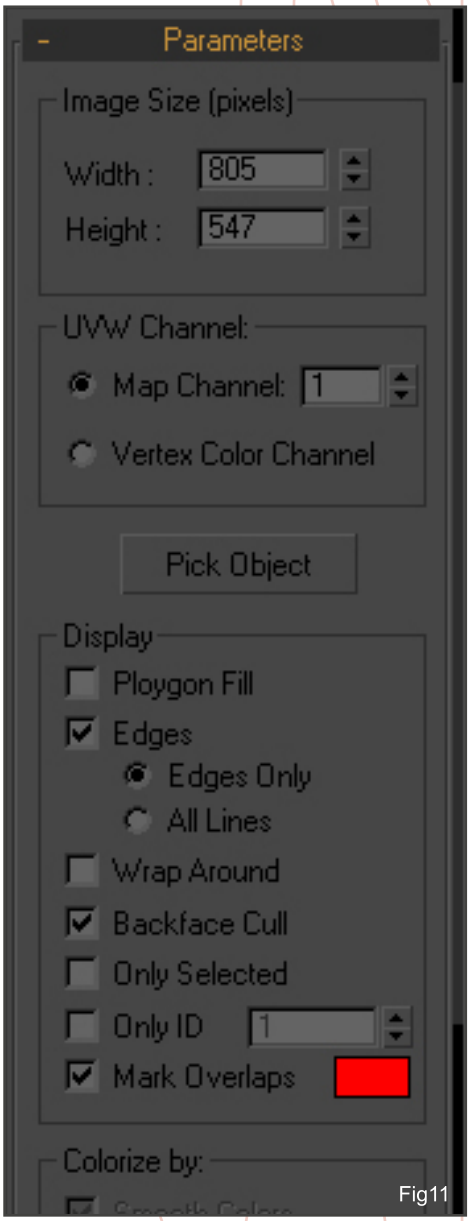


Fig11

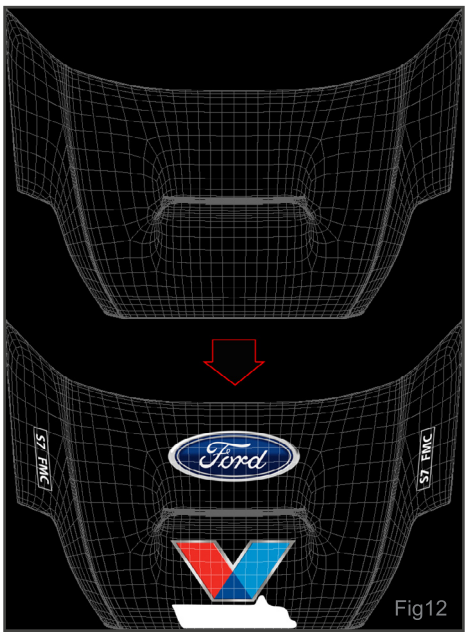


Fig12

Photoshop, I can create and position the decals accordingly. Right now, we're going to create three raytrace materials of red, dark grey and a light grey colour. Fig.13 shows the settings for the red paint, where I used a standard raytrace material with two different falloff maps assigned to the reflection slot and glossiness slot. Now for the decal treatment, which can be a little confusing, but once you get through this process it'll be easier in the long run. Assign a 'Composite map' to the diffuse slot. This map helps you to position the decals wherever you want, and even to overlap them if you change the order of the slots. Moving on, by default, you'll see two empty maps; click on the first one and then select 'Mask'. Once again, there are two empty slots, namely MAP and MASK, so here I added the 'Valvoline' decal to the map slot and another map for the mask. (See the network in Fig.14-17.) Always name the main mask map with the actual decal label so that you don't have to figure out which map is which. I even turned off 'Tiling' in the bitmap coordinates section, which is compulsory for all the decal maps that will be used for the entire model. I hope that has explained the process; assign the map to the selected

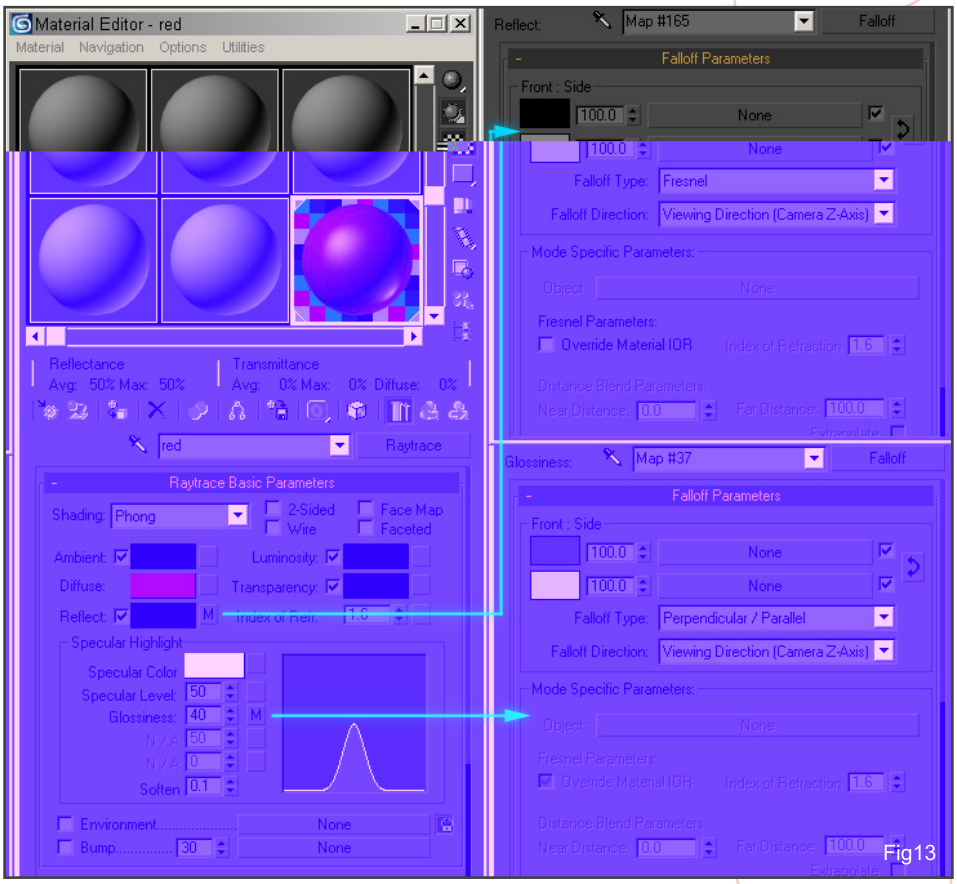


Fig13

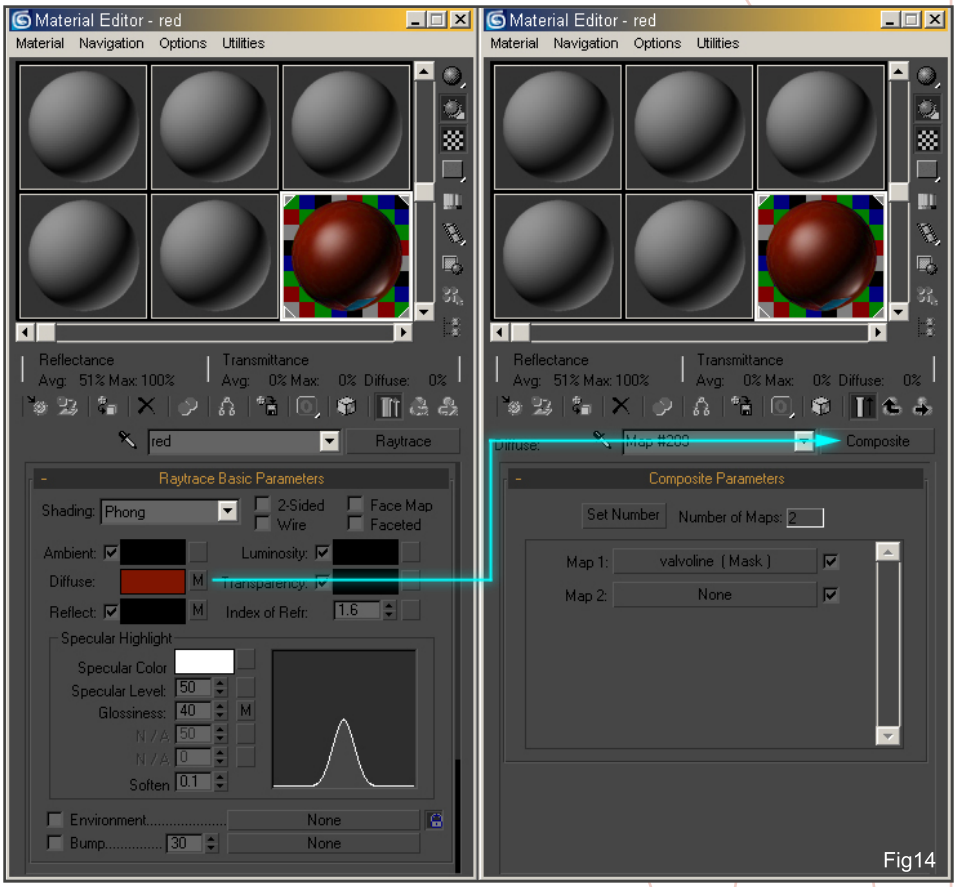
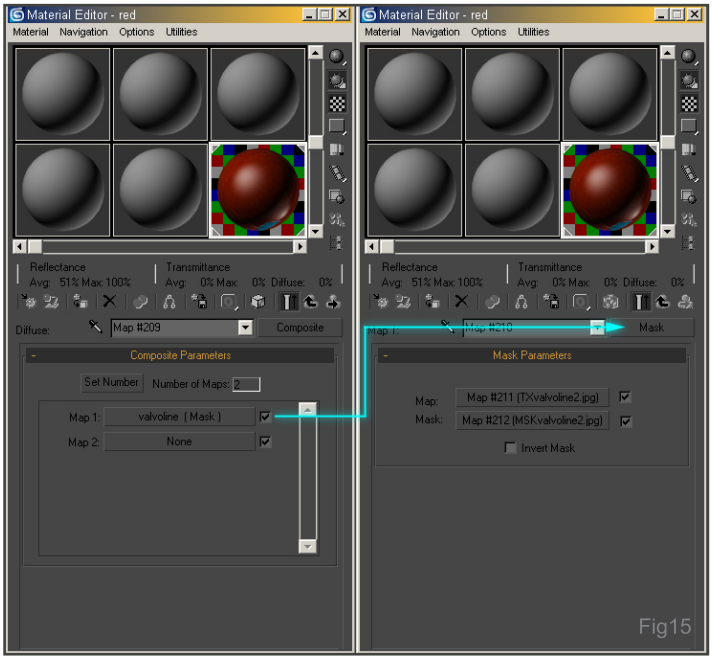
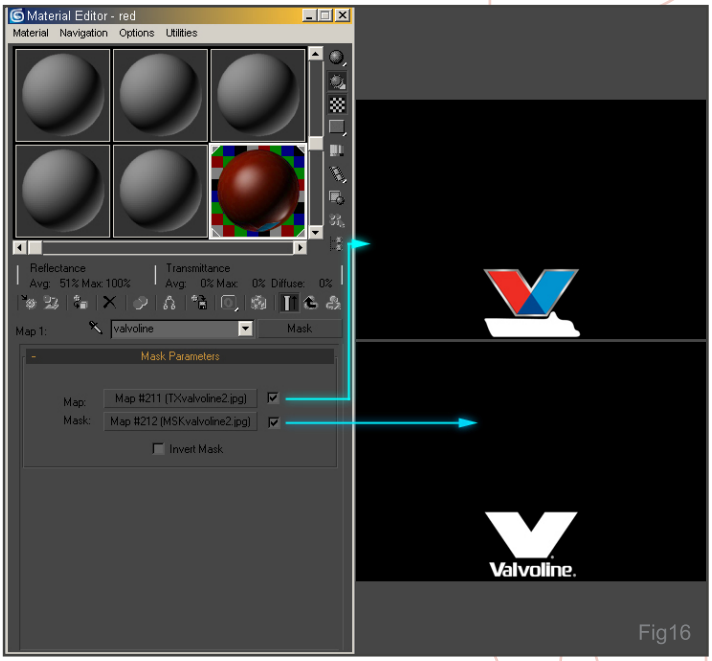


Fig14

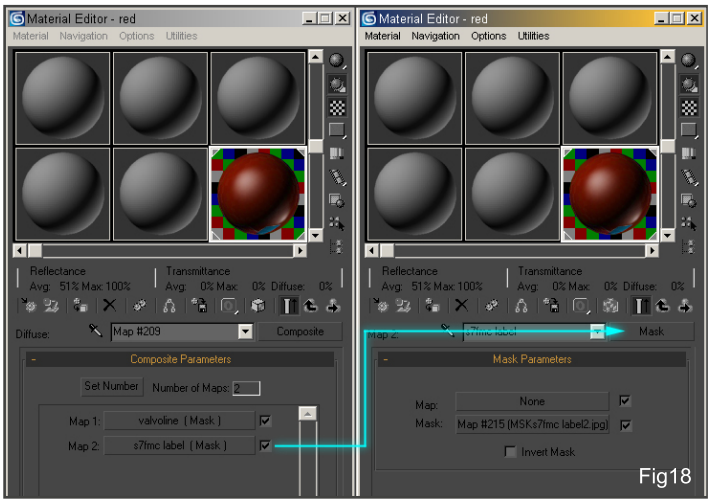






mesh and fire up a test render. Fig.17 shows the end result. The second decal map was applied using the same technique. You can copy and paste the 'Valvoline' UVW modifier and rename it to the corresponding decal map, keeping in mind that the map channel value has to be set to 2. Now, it's just a matter of adding the mask map for the second decal and changing the map channel value to 2 again, only this time in the material editor. Since this is a white decal, only the mask image is required (Fig.18&19). Render (Fig.20). Fig.21&22 show the settings for the dark grey paint. This again is a standard





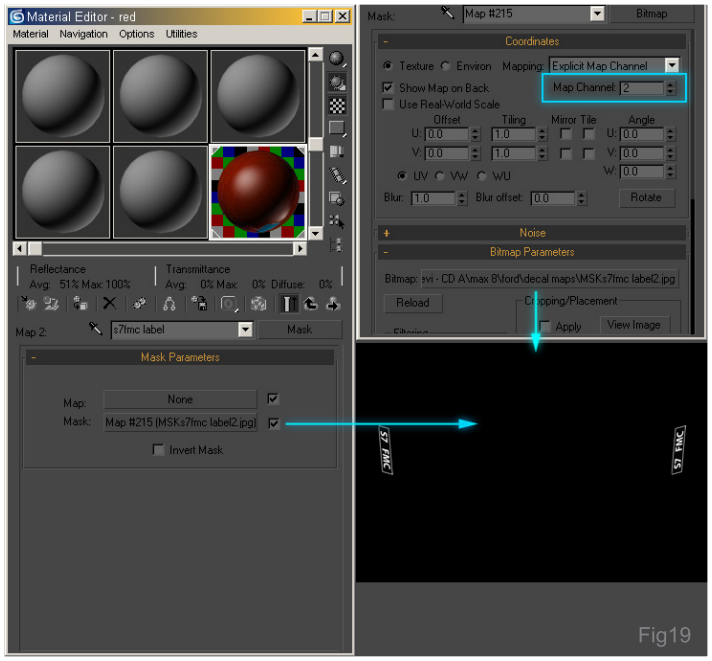




Fig20

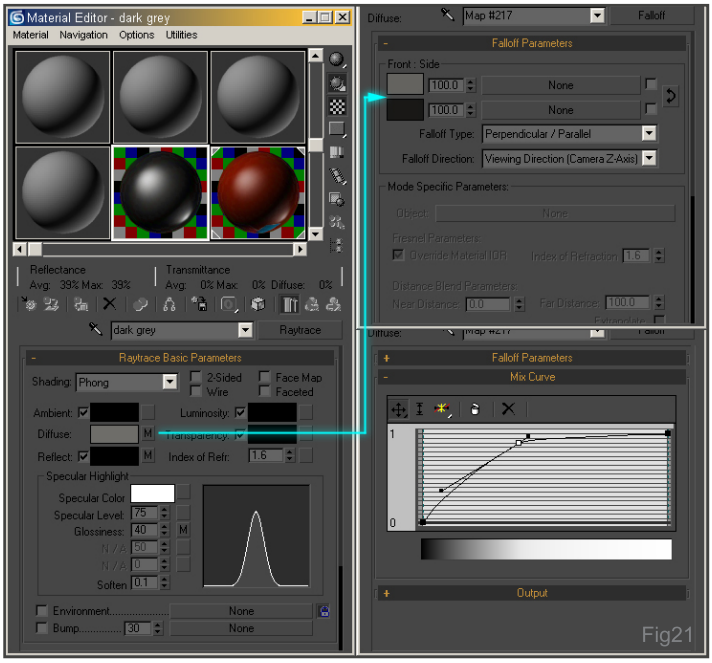


Fig21

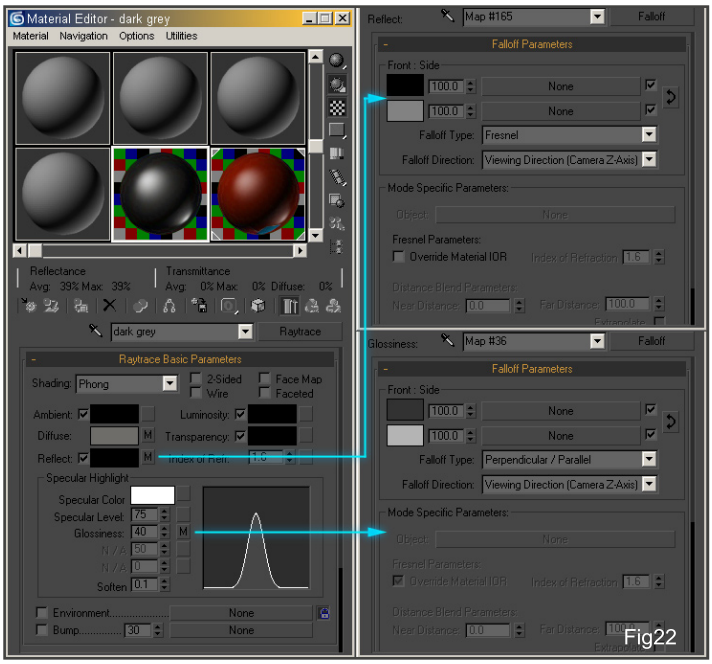


Fig22

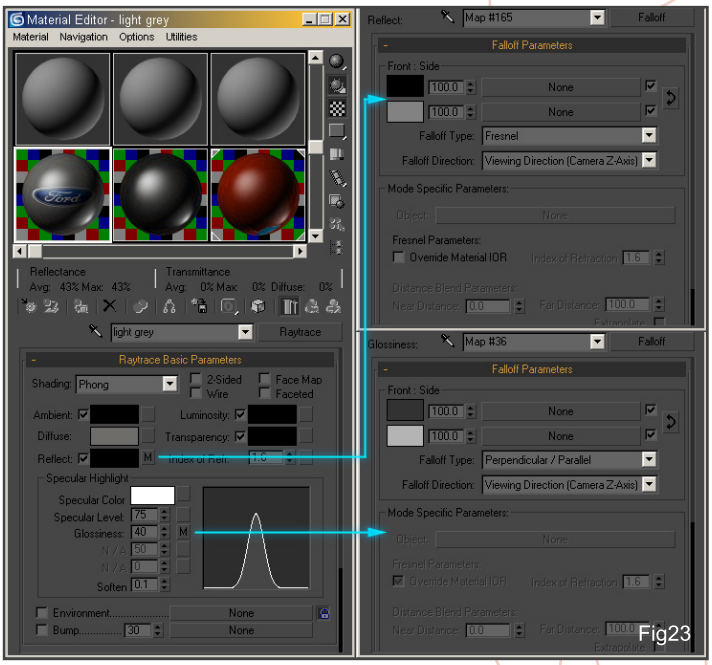


Fig23

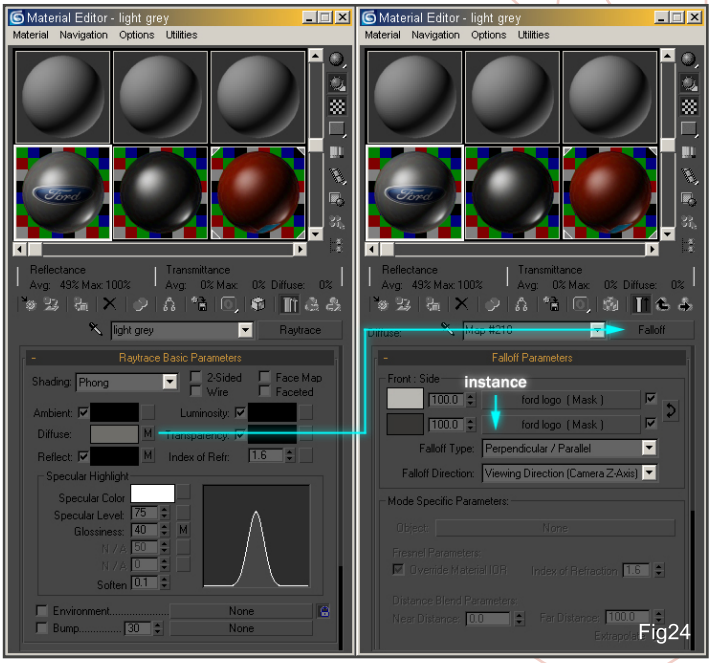
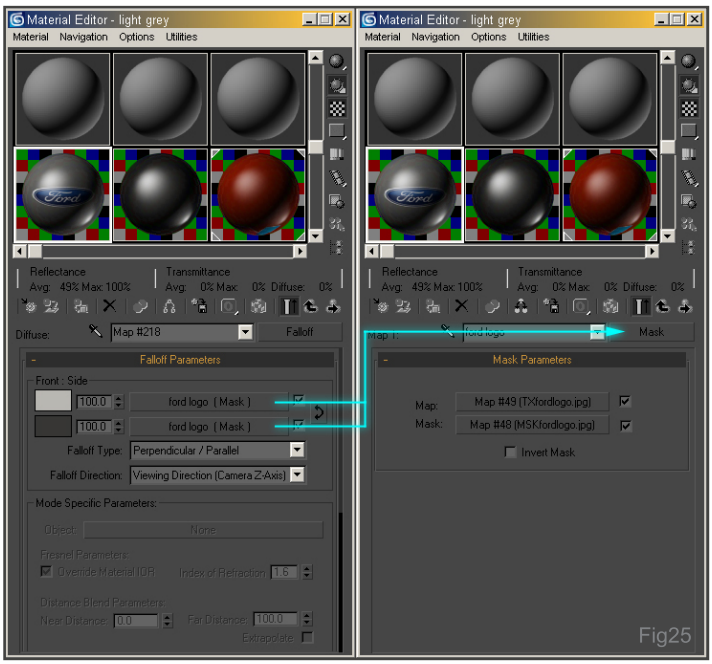
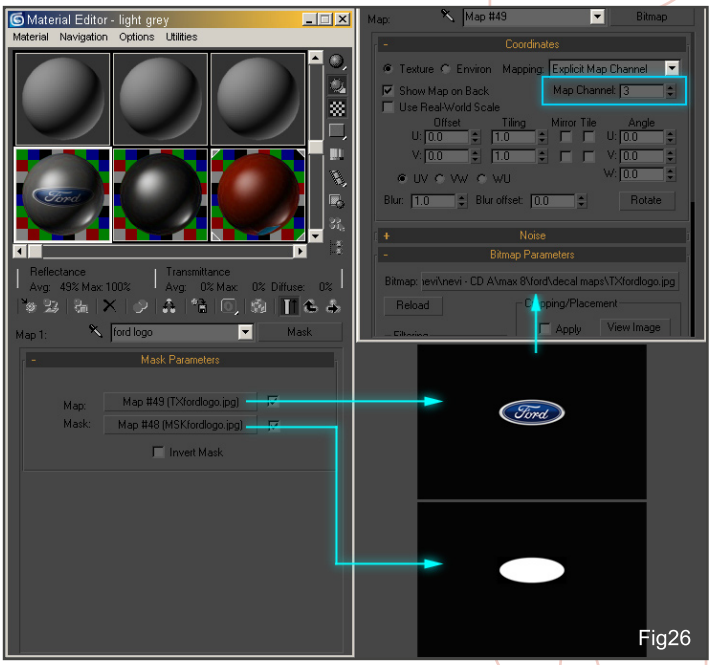


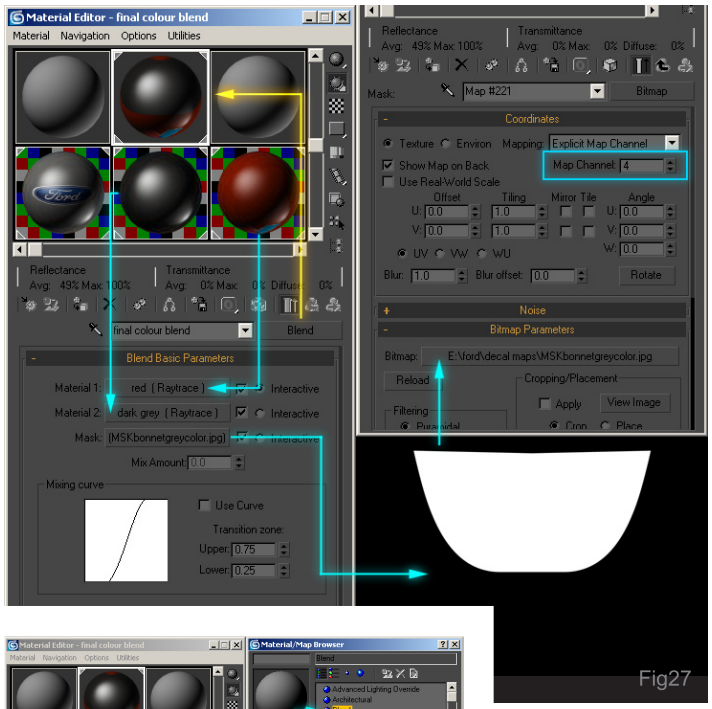
Fig24

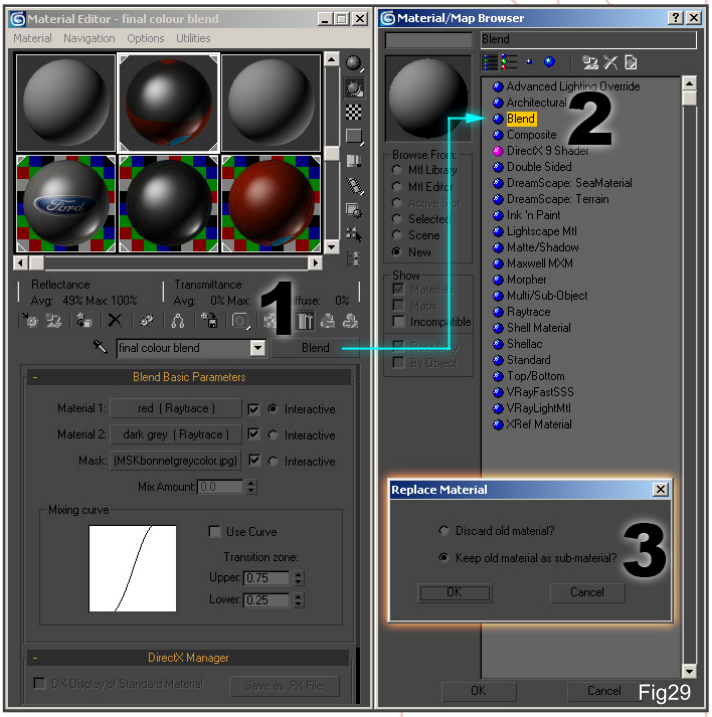
raytrace material created separately, and later on you will see why (Fig.21&22). For the third decal map, I duplicated the UVW modifier once again and renamed it to 'Ford logo' with the map channel value set to 3. Next are the settings for the light grey material (Fig.23). For this paint material, I've assigned a falloff colour map to the diffuse slot. Since I want to add the Ford logo that was shown in the wireframe image earlier, the mask maps have to be added as instances to both bitmap slots in the falloff parameters (Fig.24-26). I finally create a 'Blend material' that will encompass all the three raytrace materials, so, in order to do this, I click on the standard button in the Material /

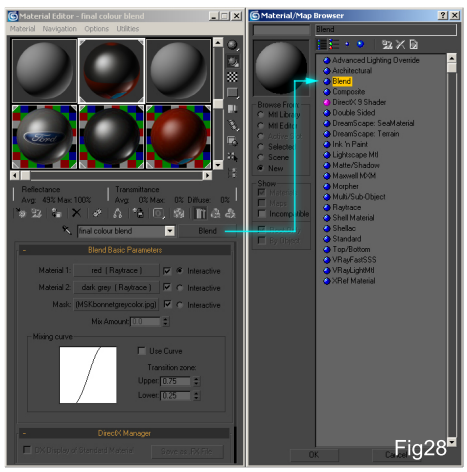




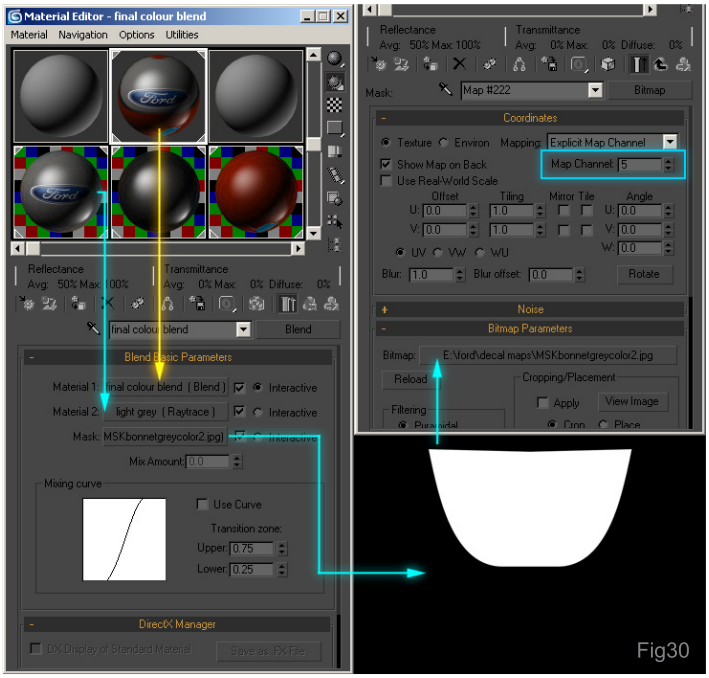








Map browser, choose 'Blend' from the list and select 'discard old material'. Now, keeping the blend material selected, I click and drag the 'Red' paint onto the 'Material 1' slot, selecting the instance option. The 'Dark grey' paint then goes on to the 'Material 2' slot with the instance option. I then add a new bitmap image for the mask under the coordinates section, set the map channel to 4, turn off tiling, duplicate the UVW modifier and set the map channel to 4. Have a look at the entire set-up in Fig.27. This is stage 1 - of 3 - of the blending process. Moving on to stage 2, add another blend material from the material/map browser, keeping the earlier one selected. Most importantly, since another blend material is added, 'Keep old material as sub-material' has to be checked. Fig.28&29 show the



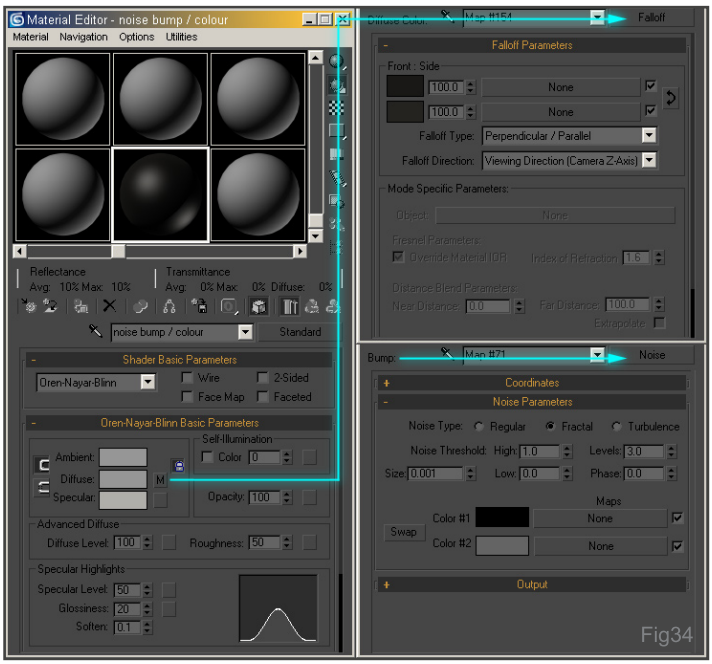


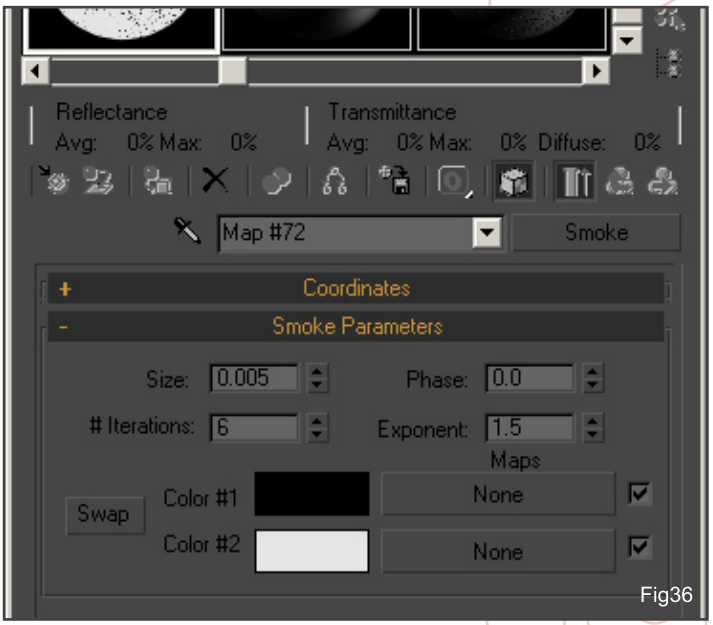
results. Stage 3: click and drag 'Light grey' paint on to the 'Material 2' slot, select the instance option, then add another bitmap image for the mask, with the map channel set to 5 and tiling turned off. Repeat the duplicating and renaming process of the UVW modifier and change the map channel value to 5 (Fig.30). Assign the new blend material to the bonnet mesh and render (Fig.31-33).

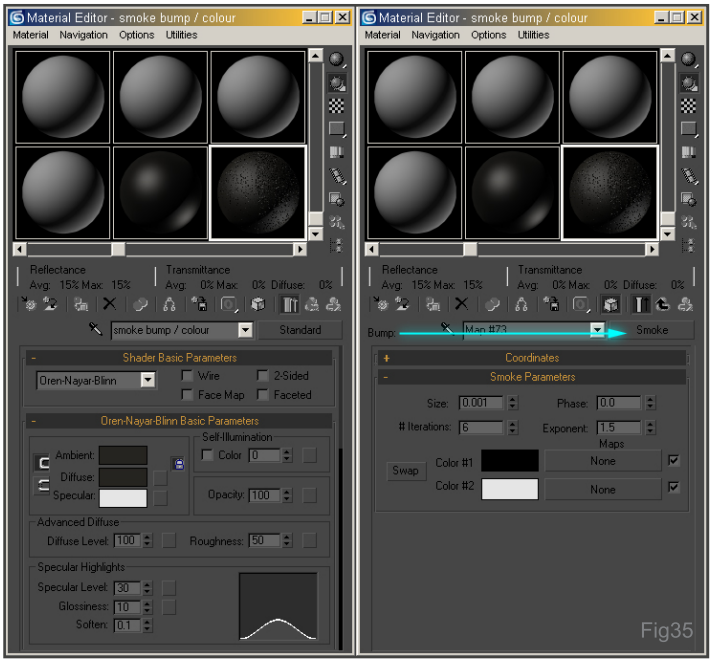


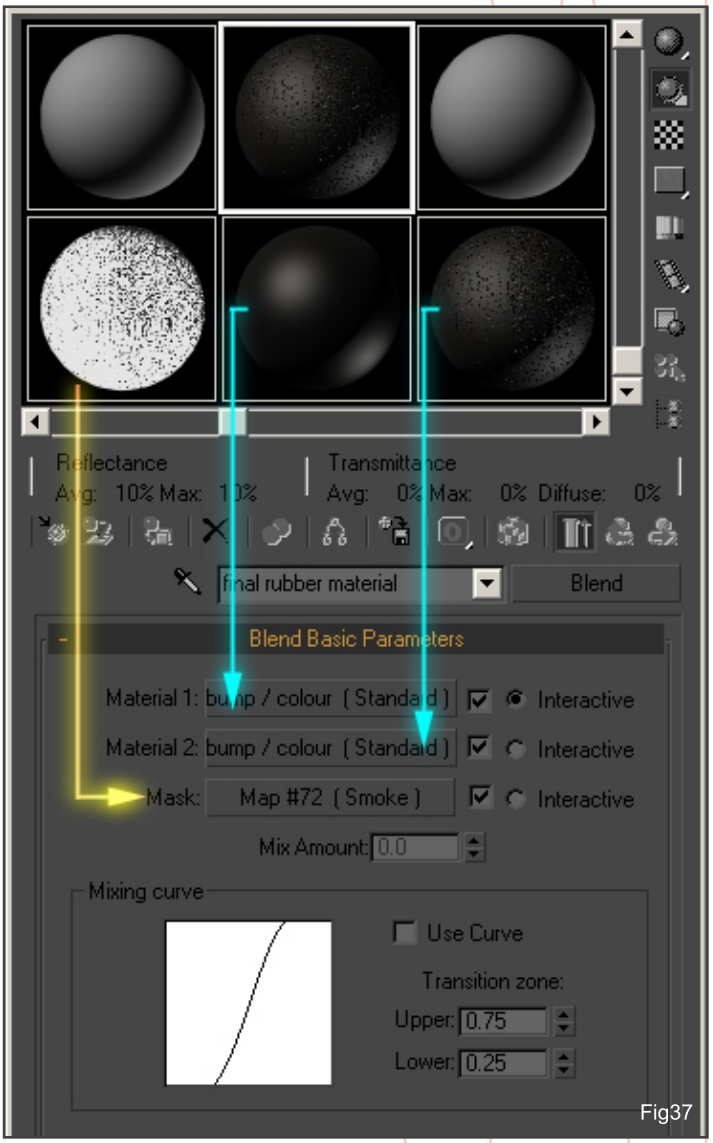












RUBBER TYRE MATERIAL

For this material, I used the Oren - Nayar - Blinn shader, which is very good for rough objects. Again, the blend material was used as I needed to combine two materials with subtle colour variation and bump, and finally a smoke map for masking. Fig.34 shows the first material, with the bump value set to 10. For the second material, the bump value is set to 10 (Fig.35). Fig.36 shows the settings for the smoke map. The final blend material was created using the same technique explained for the car paint material (Fig.37). Fig.38 shows the results. **Note:** this is will look just as good at high resolution, or close up shots - the bumps won't be that noticeable from a distance.

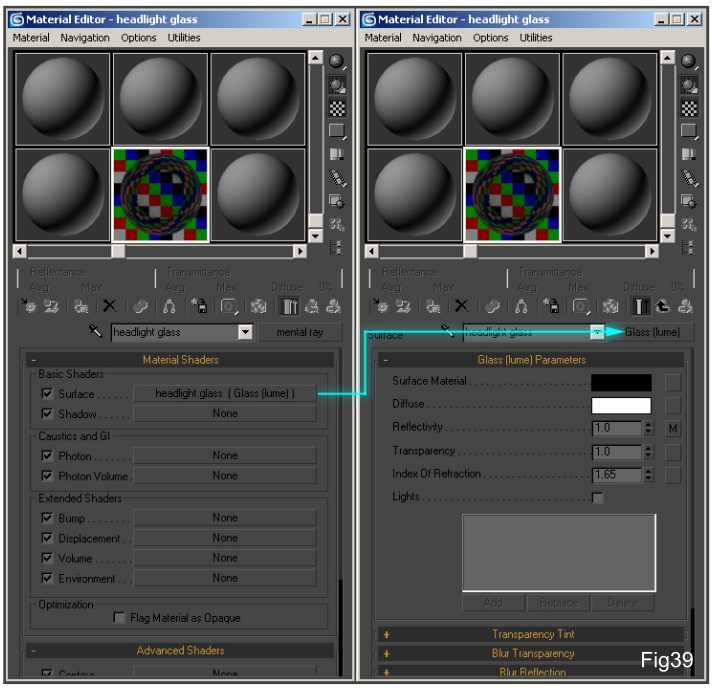


Fig39

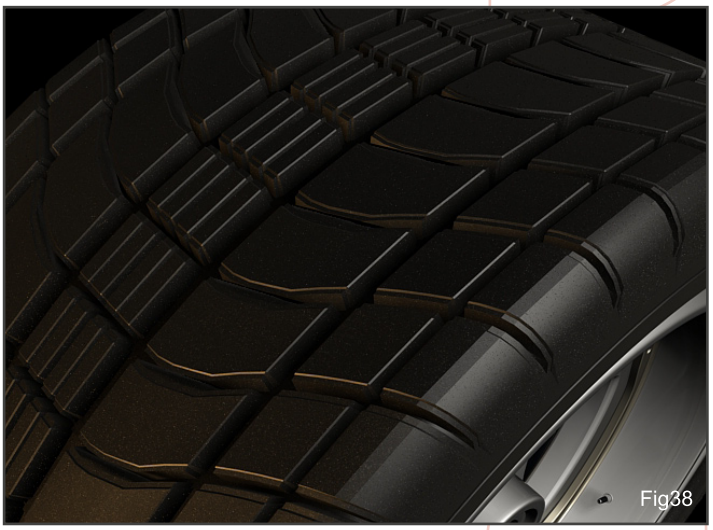

Fig38


Fig41

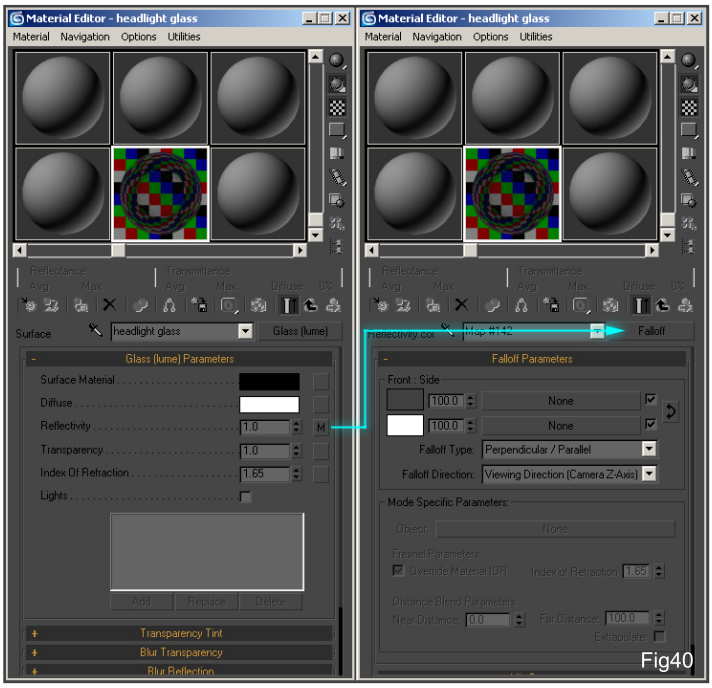


Fig40

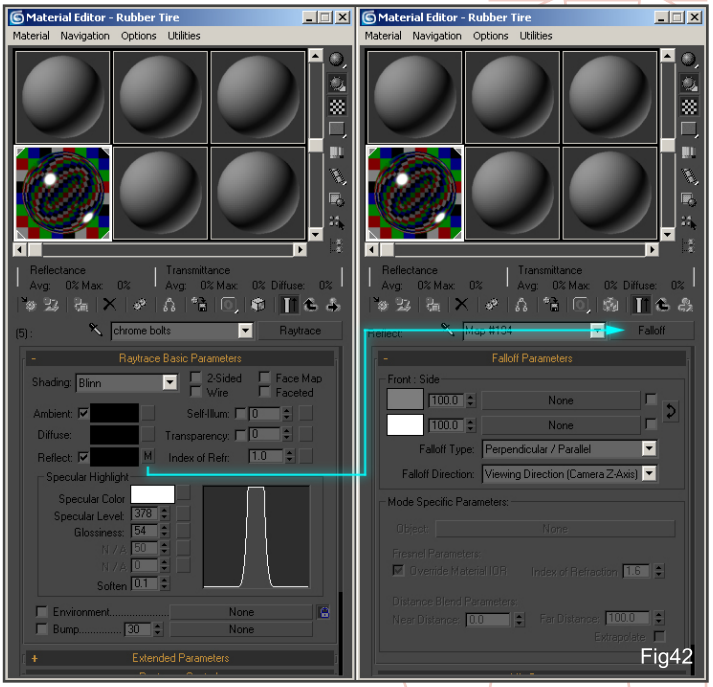


Fig42

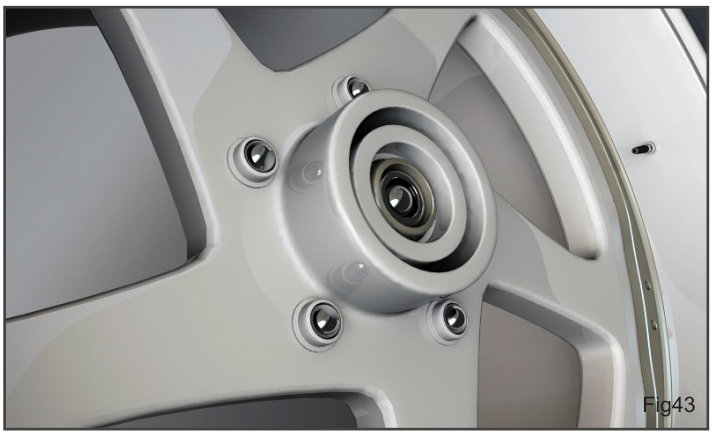
GLASS MATERIAL

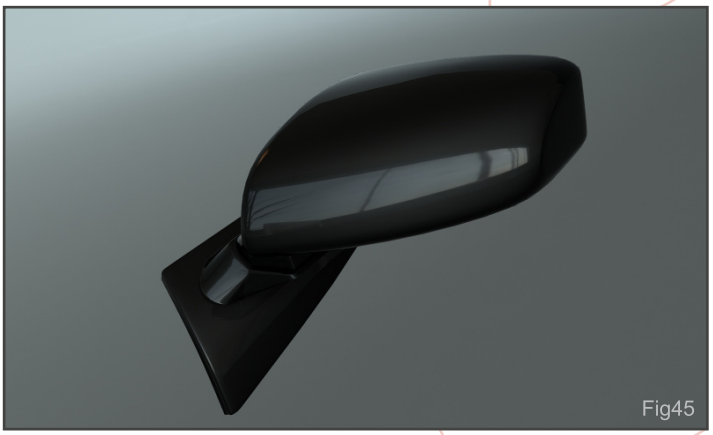
I used Mental Ray Glass Lume shader for the headlights and rear lights (Fig.39&40). Fig.41 shows the final render.

CHROME MATERIAL

For the chrome objects, a standard Max material was more than enough. A black diffuse colour and a falloff map added to the reflection slot did the trick (Fig.42). I wanted to show the chrome material in all its glory by using an HDR map for the final render (for this section only) (Fig.43).




Fig43


Fig45

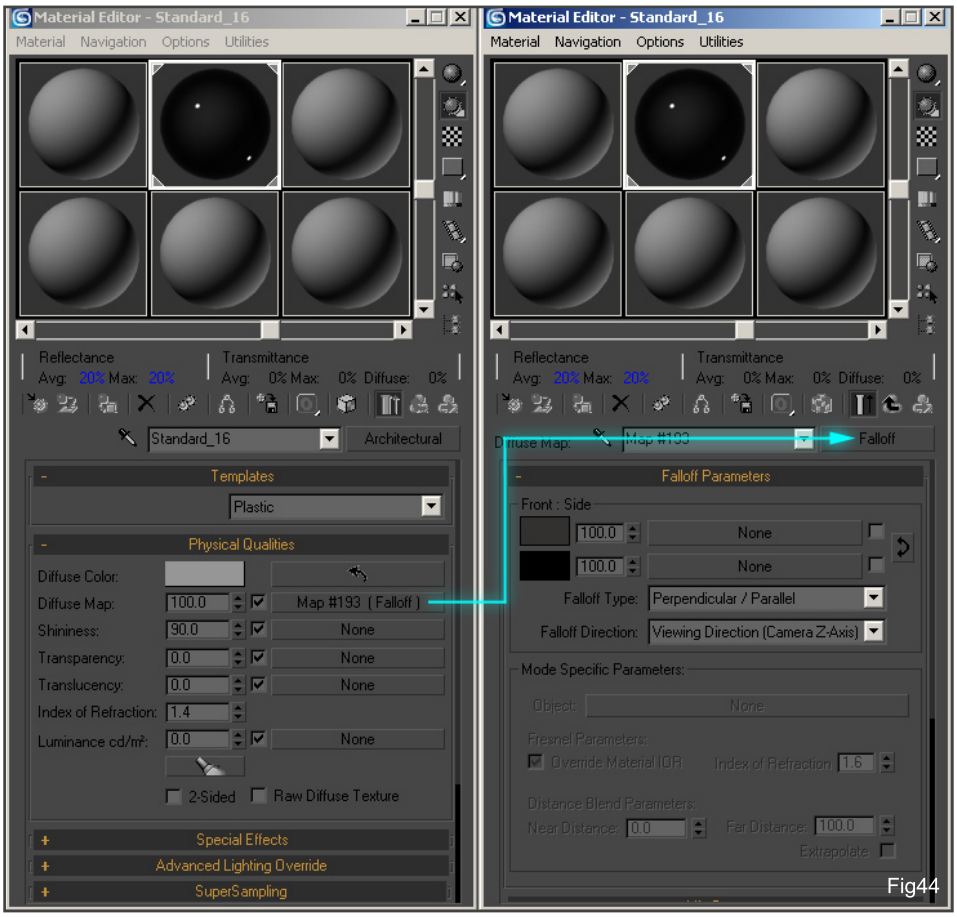


Fig44

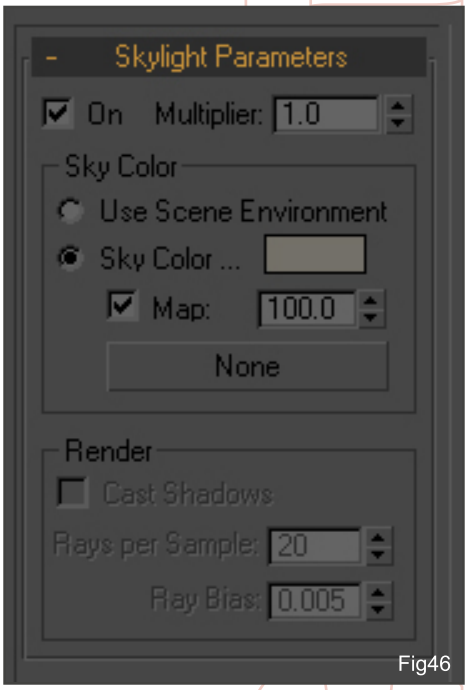


Fig46

PLASTIC MATERIAL

I chose an architectural material; a plastic template with a falloff map added to the diffuse slot (Fig.44). Ironically, I didn't use this material in my renderings, as I was worried that it might increase the rendering time (memory was a major problem on my end, so I had to scrap the idea of using the material), and the number of plastic objects were quite a lot. The final render is shown in Fig.45.

LIGHTING

The lighting set-up used in this project is slightly different. **Skylight:** this light provided the overall GI (Fig.46). **Free Area light:** I specifically used 2 of these lights for 'speculars' on the model with the diffuse option turned off, which helps when you only want to show the gloss or shine and you don't want the colours to be affected (in other words, "washed out"). You will have to play around with the multiplier to check up on the gloss intensity, so... Test renderings galore (Fig.47). I even excluded the ground plane from illumination and shadow casting, plus I turned off cast shadows for headlights, bulbs and rear lights in the object properties dialogue. **Light planes:** these planes were used for the additional illumination and most importantly, reflections. For this, the glow lume shader fit the bill (Fig.48). Since these planes illuminated the scene in a specific way, placing them is something to think about as well - it's all trial and error - you can get various results as far as reflection and illumination is concerned. In addition, a third light plane was placed on top of the car as well, again, just for the reflections (Fig.49). Another tip, in case you don't want



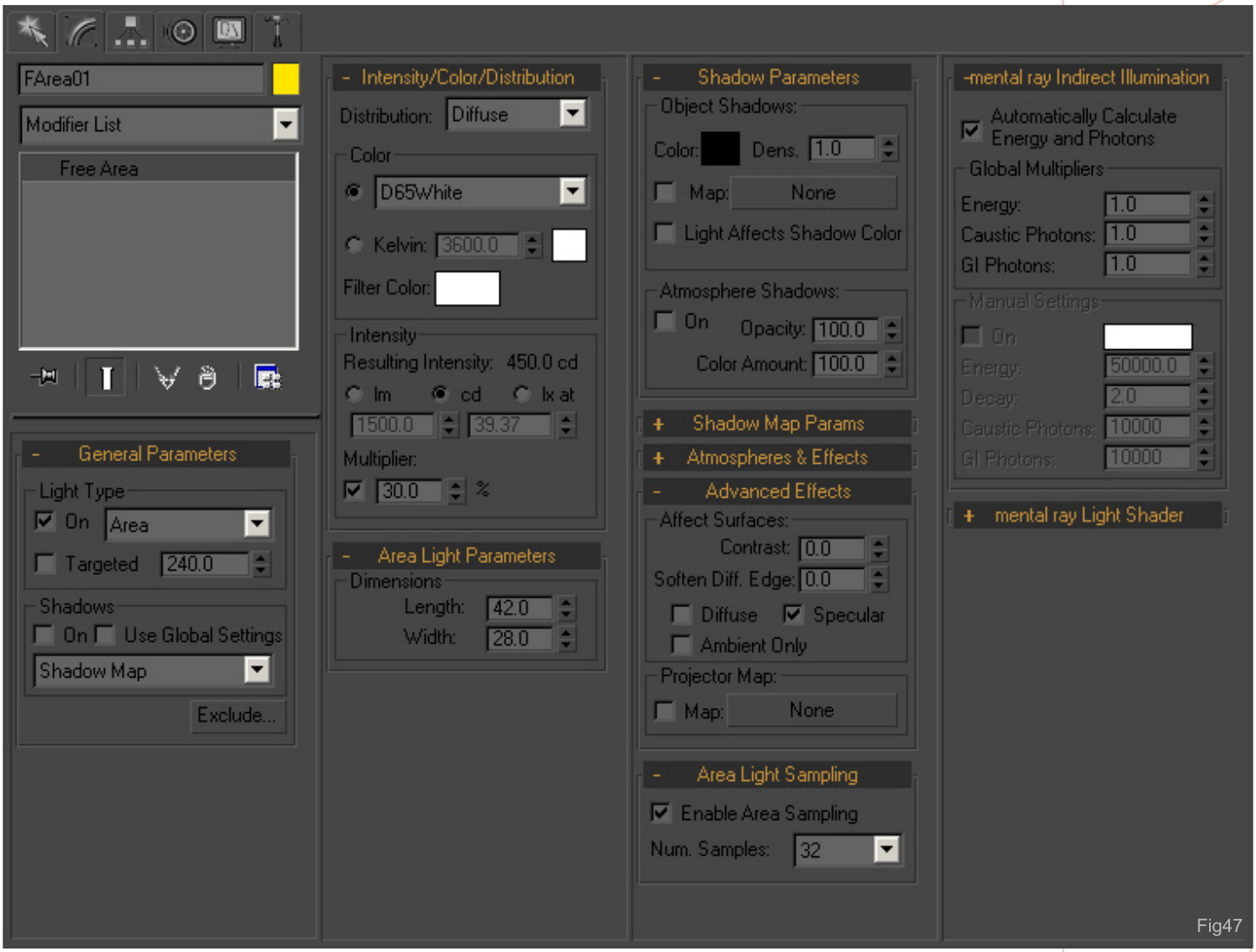


Fig47

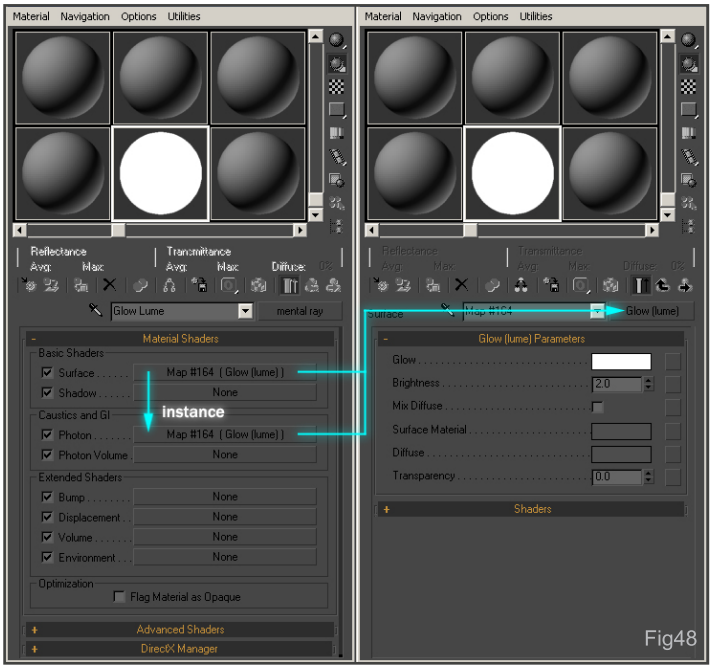


Fig48

these planes to be visible while rendering, but at the same time you want to show them in reflections: turn off 'visible to camera' and keep 'visible to reflection/refraction' on. Also, turn off 'receive shadows' if you plan to keep them visible to the camera but don't want other objects to cast shadows on them.

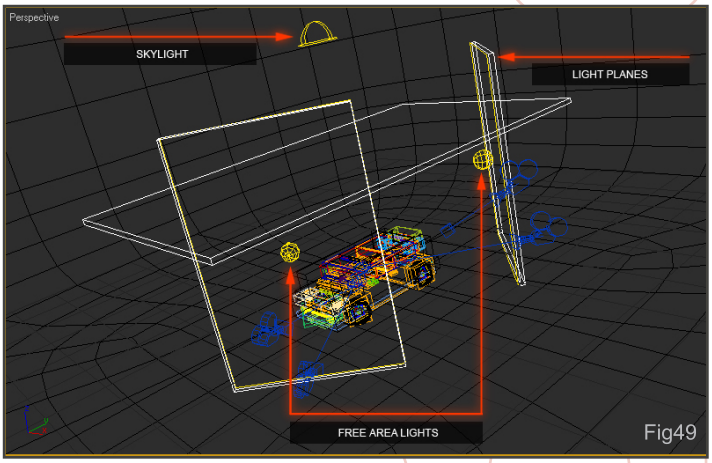


Fig49



RENDERING

Mental Ray is my favourite renderer to date. This is just my personal opinion however, and in the end it all depends on how well you manipulate the other renderers to the fullest. As for the rendering of all the scenes, it was a major disaster! It took at least a week to finish it off! Since my graphic card died, I had to bring my work to the institute and render the images - not to mention regular power cuts from 3 - 6pm) - but, somehow, I managed. At 800 x 480 for each of the views, it took 4 - 6 hours - even more, depending on the camera angle and the materials used. Also, without the settings for BSP, Map manager and memory limit, Max would shut down immediately after hitting the render button, thanks to the high polygon count. Yikes! These options were very new to me in the initial stage, so I had to look it up in the reference file to see how I can render scenes with high polygon counts. Check out the list of options below with their descriptions, which were taken from the Max reference file:

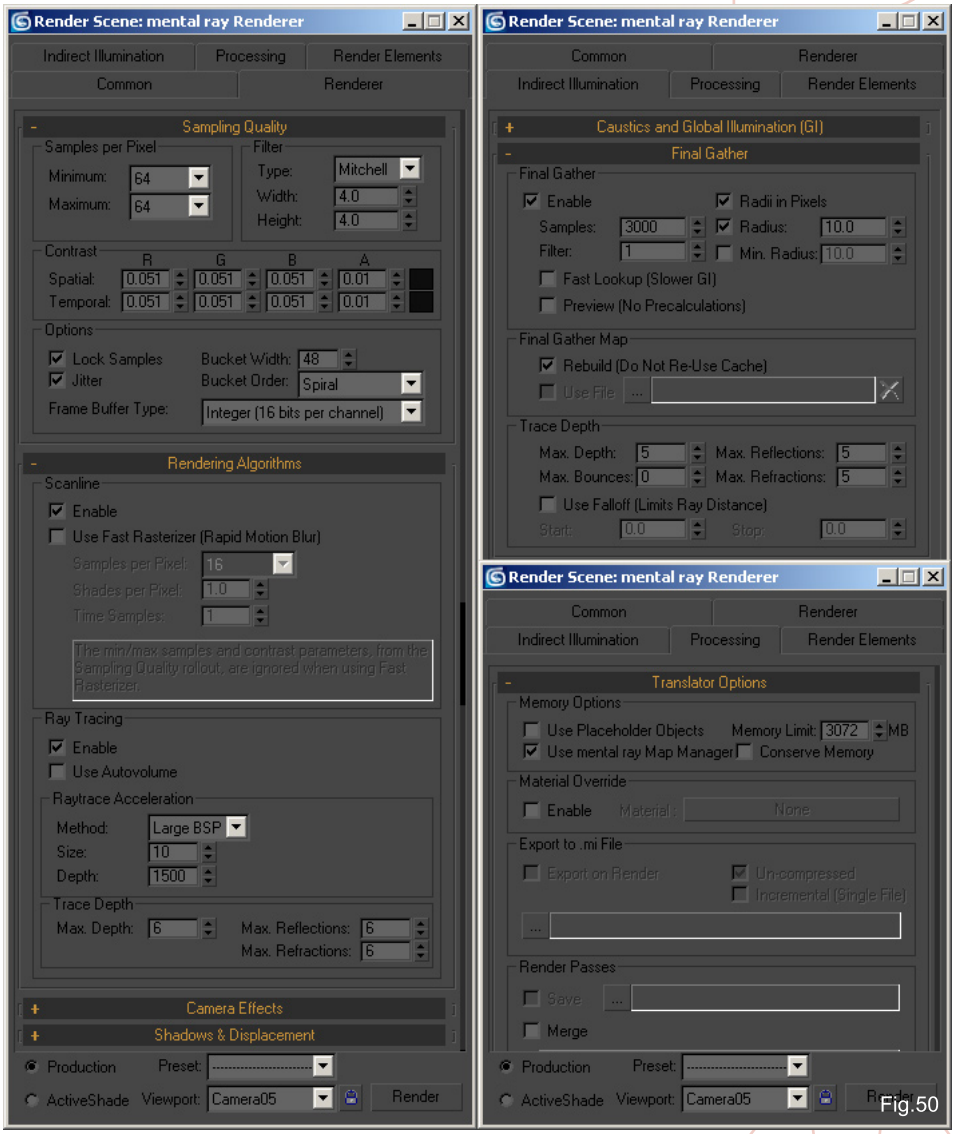


Fig.50

BSP METHOD

Size—Sets the maximum number of faces (triangles) in the leaf of a BSP tree. Increasing the Size value reduces memory consumption but increases rendering time. Default=10. Depth—sets the maximum number of levels in the BSP tree. Increasing the Depth value reduces rendering time, but increases memory consumption and preprocessing time. Default=40. Tip: For large scenes, increasing the Depth value to 50 or more can greatly improve rendering time.

BSP METHOD, RAYTRACE ACCELERATION

The Mental Ray renderer provides three different ray-tracing methods of accelerating the process of ray tracing. The methods are: BSP (Binary Space Partitioning). This method (the default) performs best for most purposes. Grid. This method can perform better on multiprocessor systems. Large BSP. This method can perform better with large scenes and with distributed bucket rendering.

MEMORY LIMIT

[For this option click the processing tab, you will find it under the translator options rollout] The Mental Ray renderer keeps a count of the memory it uses at render time. If it reaches the memory limit and Use Placeholder Objects is on, the geometry for some objects will be discarded in order to allocate memory for other objects. If Use Placeholder Objects is off, or if after deleting geometry more memory is still needed, the renderer releases texture-map memory as well. Default=1024 MB. For the final rendering, I had to crank it up to maximum value: 3072 MB.

MAP MANAGER

[For this option, click the processing tab, you will find it under the translator options rollout] When on, maps are read from the disk and if necessary, translated to a format that the Mental Ray renderer can read. When off, maps are accessed directly from memory, and translation is unnecessary. Default=off. Following is a complete list of differences between turning this option on and off; When on: Mental Ray reads textures directly from disk (Mental Ray is able to flush textures out of memory when memory



Fig.51

is low). Also, textures are loaded only if needed. Mental Ray uses its built-in pyramid filtering system. These pyramid lookup tables can be flushed out of memory when memory is low. Texture formats not supported directly by Mental Ray are read by 3DS Max and sent, before rendering begins, as binary data to Mental Ray. When off: 3DS Max reads the textures from disk, and then sends individual pixel colours to Mental Ray as they are needed. Note: 3DS Max reads the textures from disk and keeps them stored in memory between renders. This can make renders faster, because the bitmaps don't need to be reloaded every time. 3DS Max will not read the texture from disk if it was already loaded previously (for example, in a previous render, for a Material Editor preview, or for displaying the map in a viewport). Rendering uses a pyramid filter shader that is identical to the standard 3DS Max pyramid filter system. Turning this option on is useful for large scenes that take a lot of memory to render. Turning it off is quicker, because textures already loaded in memory don't have to be reloaded by Mental Ray. But turning it off might use more memory and doesn't allow for flushing when memory is low, unless you use the 3DS Max bitmap pager.

Well, this is the technical side to it. Have a look at the settings that I have used for rendering the final image in Fig.50. Even after experimenting with the settings, the rendering would still be very long. This left no other alternative but to render the entire scene in 'regions'. Dividing the scene into 2 parts, or 2 regions, I finally got the rendering started. The rest was the assembly of all the images and a few corrections in Photoshop. Final results: Fig.51&52.

Neville Dsouza

This amazing tutorial is from the new Mental Ray site: http://mymentalray.com. Visit for more amazing Mental Ray tutorials and more!



Fig.52



3DCreative have teamed up with 3dtotal.com and design studio press to give you a preview of some fantastic books on offer.

This Month; Concept Design 2.

Seventeen guest artists are featured along with the original Seven Los Angeles Entertainment Designers from Concept Design 1 to show us worlds, vehicles, monsters and creations beyond the wildest imagination! Take a journey into the minds of talented and successful concept design professionals who are able to create for the sake of creation keeping the motto, "art for thought's sake" alive and well.

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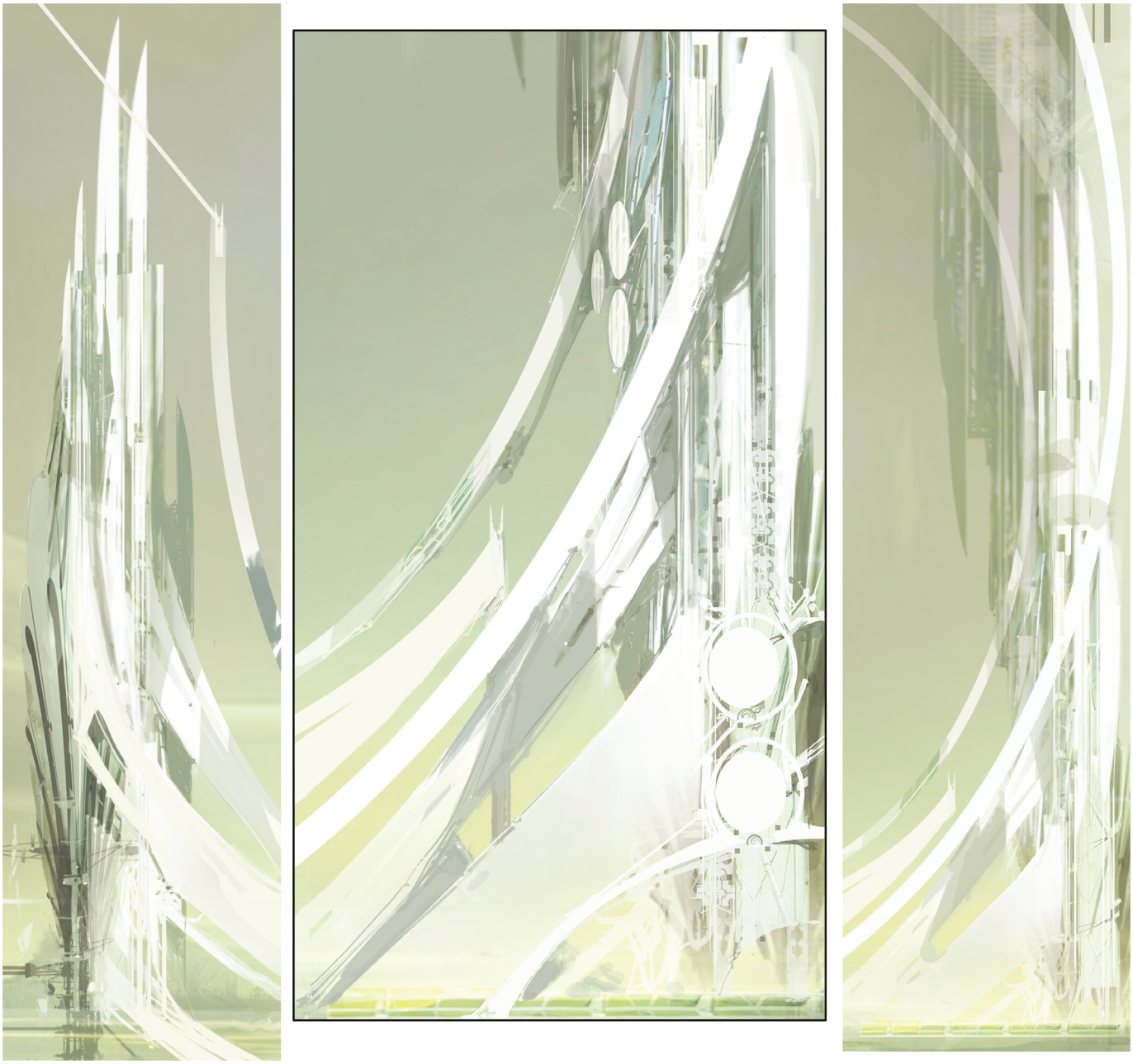
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STEPHAN MARTINIERE:

NAUTILUS

When I started this painting, I was unsure what the end result would be. The starting point was a book cover I did called *Building Harlequin's Moon* by Larry Niven and Brenda Cooper. The story is about a small human colony terraforming a moon in a distant future, using enormous automated machines. The vehicle I created was half train, half harvester. Although I was pleased with the result, I felt the desire to see something bigger in scale. After experimenting with different ideas for a floating vehicle, some very organic shapes reminiscent of seashells started to emerge. I thought it would be interesting to create an environment reminiscent of an aquatic setting.

How would an underwater species evolve out of its environment and still retain some of its original aquatic design, say a thousand years in the future? I always like to think of connections between all the elements in a painting. The challenging and exciting part is to design from existing forms in the underwater ecosystem, and extrapolate those forms into terrestrial and aerial environments. The organic connection in this painting is not structural but more visual. Biomorphic. I wanted the elements to remind me of specific organisms like the nautilus, the fan-shaped sponge, or the jellyfish. Fins could have evolved into some organic solar sails powering biomechanic ships. I particularly like the structures in the distance. They rise in an intricate assembly of very thin, white blades and curves reminiscent of fish skulls. They have a certain elegance and lightness that seem to defy gravity. I didn't sit for hours at my table like I sometimes do, exploring numerous shape and concept possibilities. Had I spent more time I could have come up with very different and possibly more interesting shapes, but this was not a commissioned assignment. The process for making this painting was more organic, more spontaneous. I was more interested in seeing it happen than I was in doing it. I was letting the colors and shapes dictate the next step; letting the end result be a surprise. The underwater species evolution idea was more of a guideline. I like this spontaneous approach as much as the rigorous process of concepts. They both have their intellectual and visual rewards.


STEPHAN.MARTINIERE.2007

Tutorial

Welcome to our ongoing tutorial which will provide a step by step guide to building a low poly character based upon a model by Seong-Wha Jeong. This Month is the final part : Texturing Armour and Clothing.

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Mazinger Z

Making of

Since Angel started CG, he always wanted to make a decent model of his childhood hero; Mazinger Z. See how Angel went from making models out of Plasticine and various objects to perfectly rendered polygons...



Mazinger Z

My brother and I never missed an episode on Saturday mornings. We loved the show so much that we even made hand-made models out of cans, shoeboxes, Plasticine and whatever else we could find that could be used as a body part. Now, my skills have grown from shoeboxes and Plasticine, to polygons and vertices. In 2004, I decided that it was time to pay homage to the creator of the show, Go Nagai, by creating a CG Mazinger Z - sort of like a thank you for all the good memories (Fig.01: A still from the Anime). I started the project by collecting as much reference material as I could get my hands on; toys, action figures, still images from the show, games etc. - everything was useful. My main goal was to create a Mazinger that was as close to the show as possible. I started by making rough sketches to better understand the shapes that I needed to model. I didn't use these drawings to model from, but used them to work out lines, proportions and how the geometry should flow. My most important piece of reference was a sculpture that my wife bought me for my birthday (yes, I have a cool wife) of which I took photos with my digital camera of all the parts that I needed. The sculpture was not a perfect replica of what we see in the anime, so this is where all of my other references came in handy. Fig.02 shows some of the references I collected before I started the project.

For this work, I used Lightwave 3D for everything except the composition, which was done in Photoshop. Most parts are straightforward: the arms and legs were built by revolving profile curves; the hands, feet and torso were made out of simple boxes (Fig.03b&c). The head was the most important part to get right, so I used my favourite modelling technique - the "extend" technique (Fig.03a). With this technique, you select edges or vertices to extrude more geometry just where you need it, so you work out the flow of loops as you keep building and shaping the geometry. I personally get more control this way.

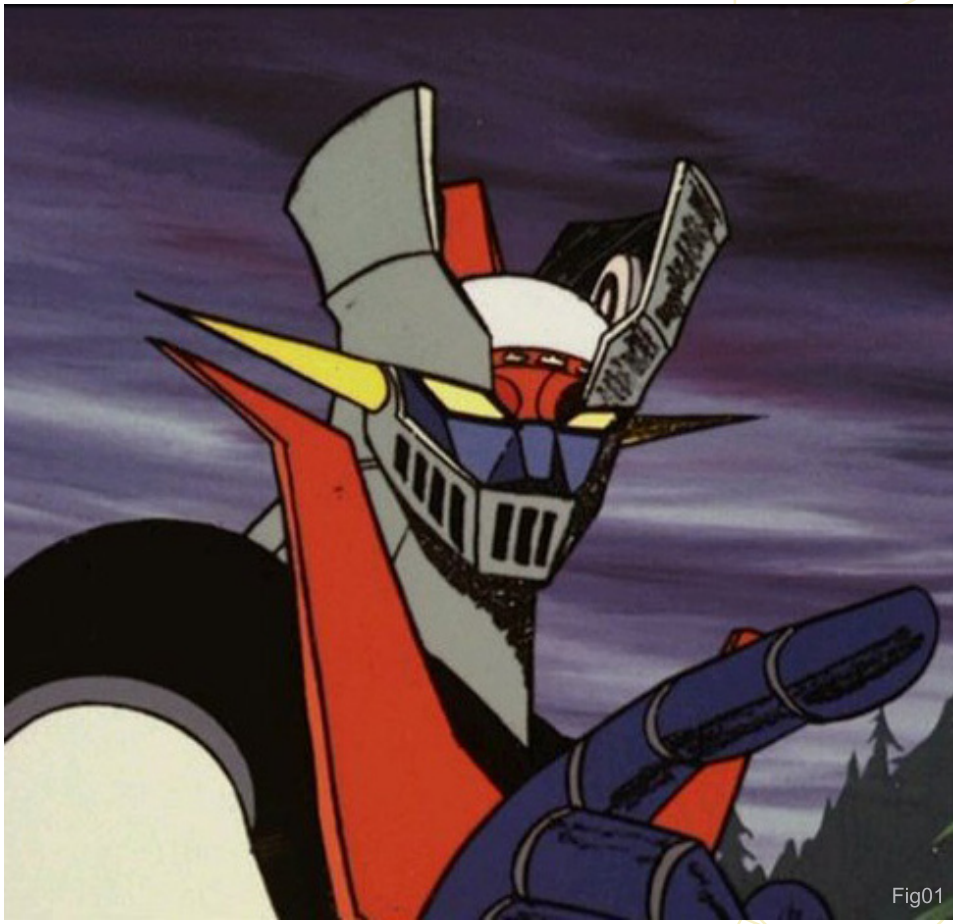
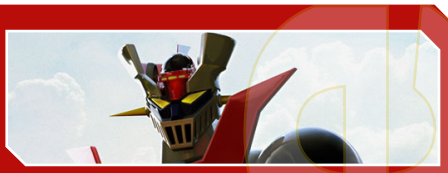


Fig01



Fig02



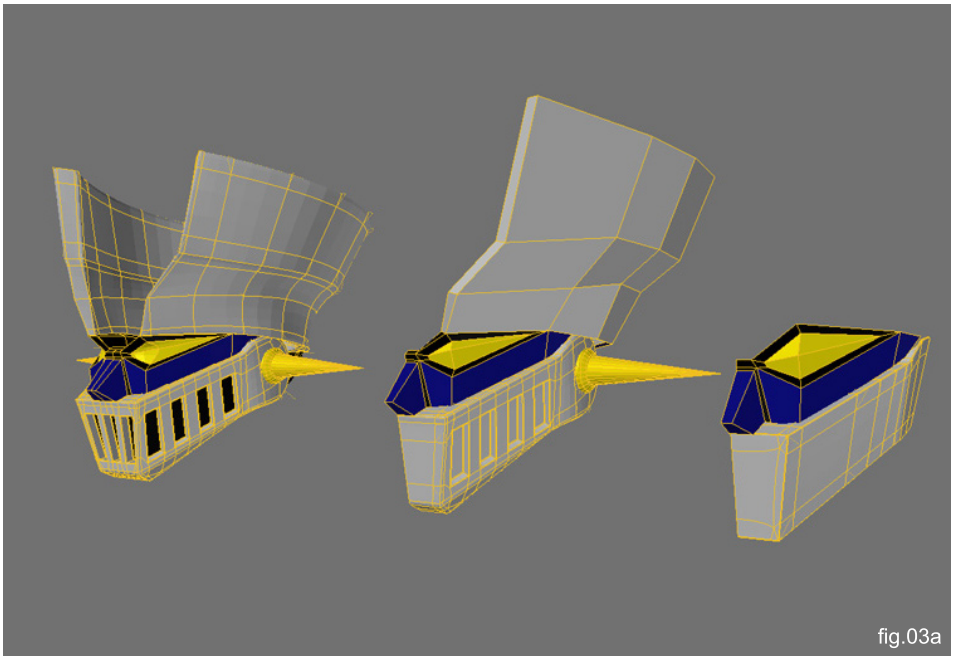


fig.03a

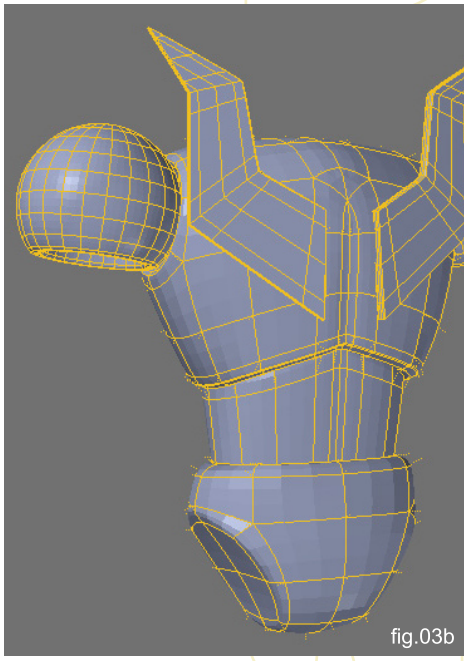


fig.03b

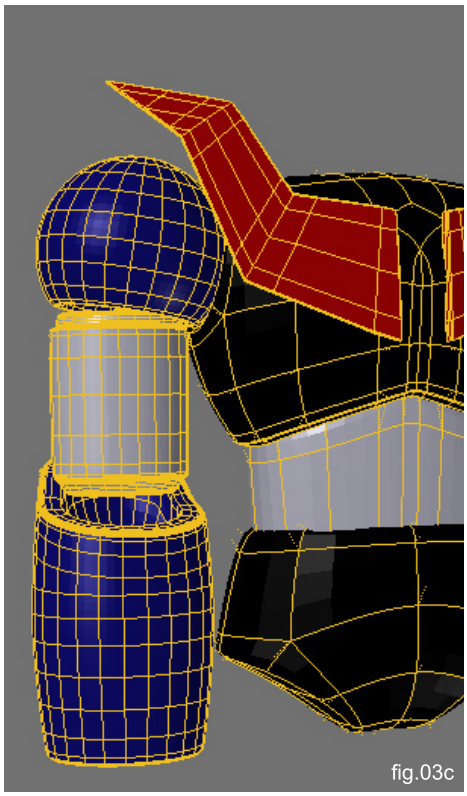


fig.03c

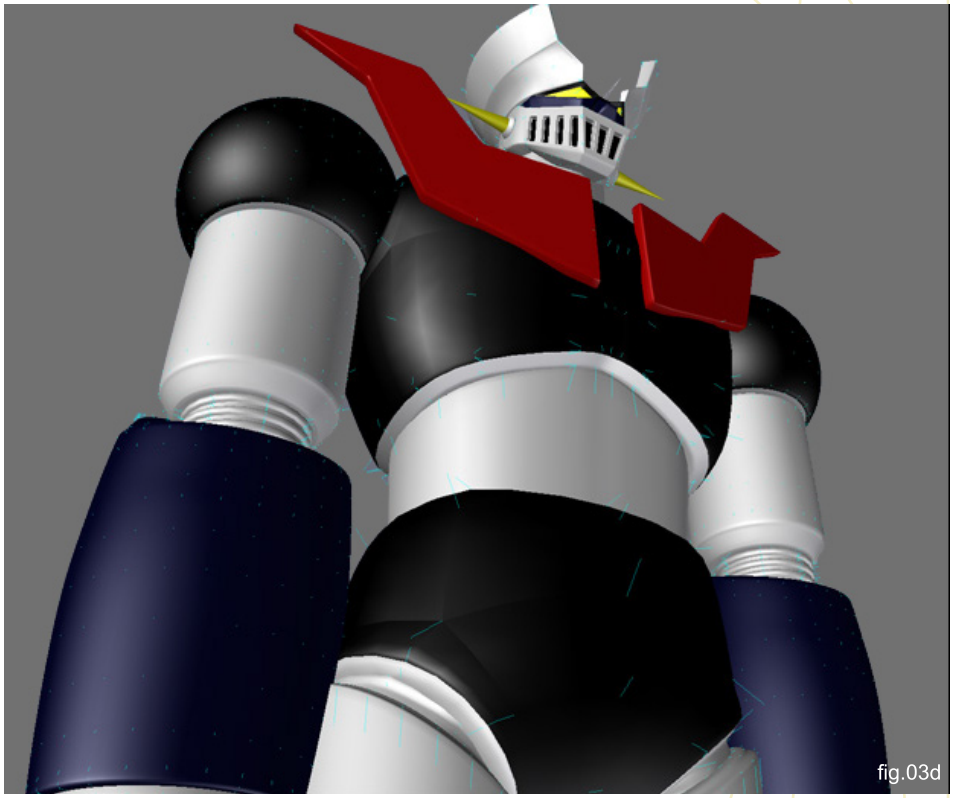
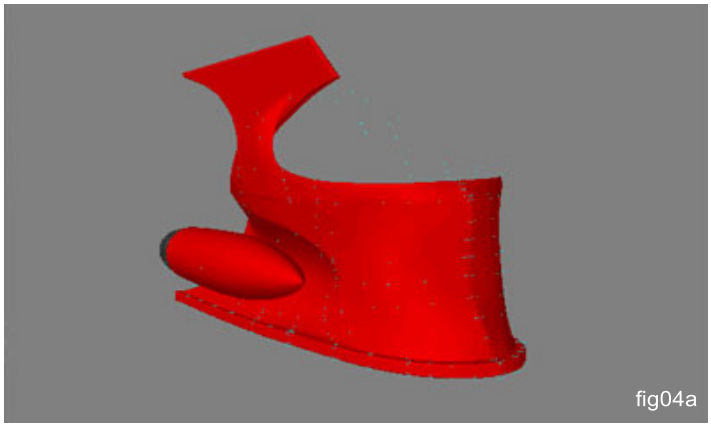
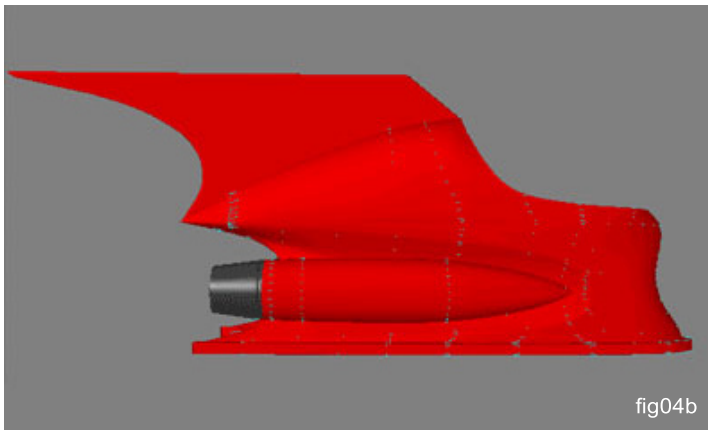


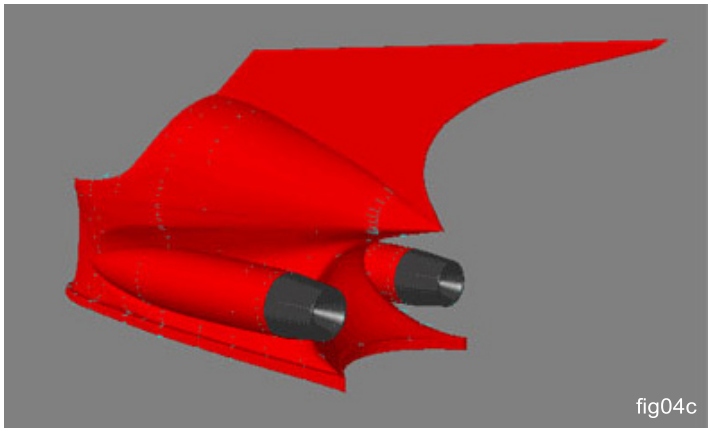
fig.03d

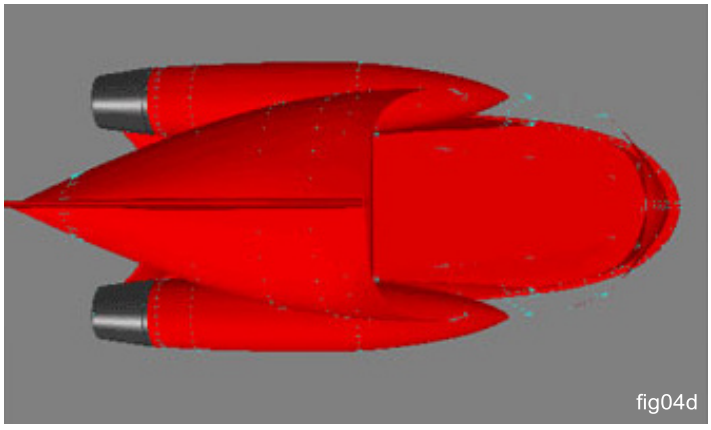
Modelling Process (Fig.04)

The Hover Pilder (the aircraft that goes in its head) was a completely different challenge. Firstly, I could not find any decent reference material on-line to make an accurate model - all the images were small and fuzzy. This is when “Niki” at CGTalk came to the rescue and provided me excellent side and top views. I created the fuselage geometry with spline patches to get the shapes as accurate as possible. I usually use spline patches for hard surface models such as cars, aeroplanes etc. For the wings, I used boxes and more revolved splines for the fans cases. The interior is not nearly as detailed since it really was not necessary for this shot. I also made a low resolution model of the pilot, Koji Kabuto, which is barely visible in the picture but adds to the realism of the image, as it is just another subtle detail. (Fig.04a,b,c,d: Modelling; Fig.04e: Nearly finished; Fig.04f: Final render.)


fig04a


fig04b


fig04c


fig04d

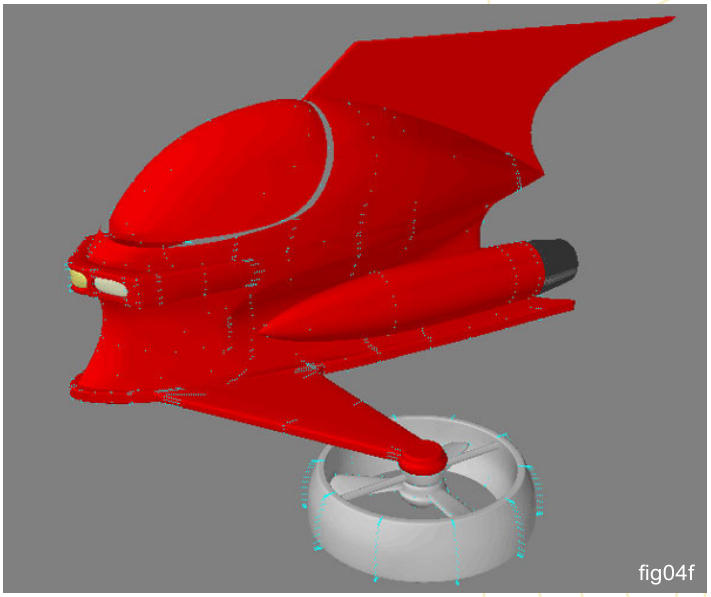
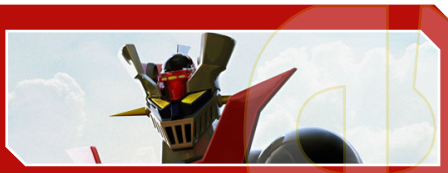

fig04f


fig04e

My reference sculpture depicts a scene from the very beginning of the show where Mazinger defeats its first round of enemy Mechas. I decided to make this scene to add interest to the image and not just make an image of a simple robot. Doublas M2's long neck was quite easy to make, just a subdivided cylinder with every other ring of polys scaled in to make the neck's divisions. The head was quite simple as well; I started with a box and sculpted it to get the right shape. I also extruded some circles along splines to create twisted tubes and wires for the severed neck. I also cloned the neck and deformed it a bit to make it somewhat different to the other piece of the neck, and then placed it close to the camera. Now there is some action - it looks like Mazinger just ripped Doublas M2's neck!



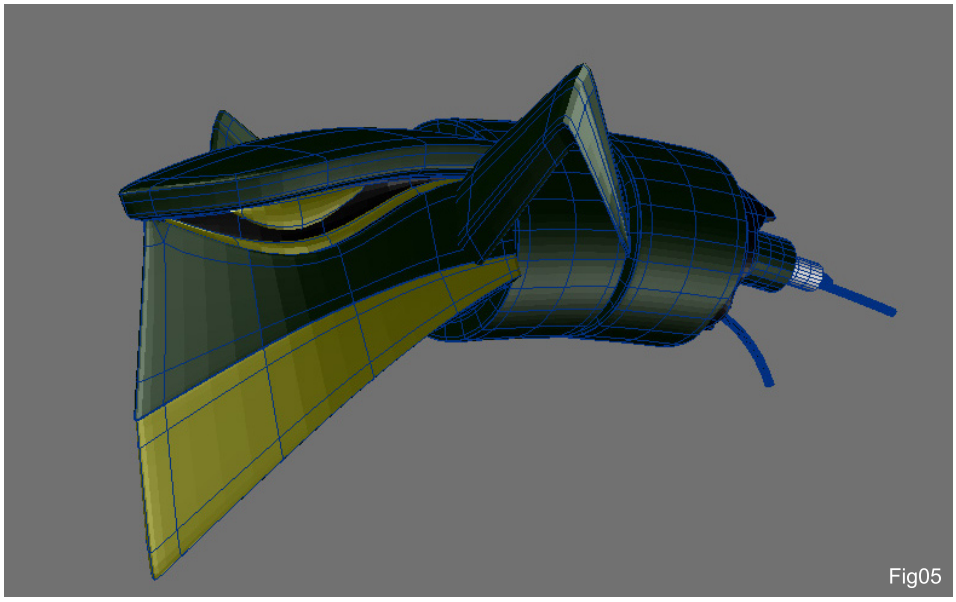


Fig05

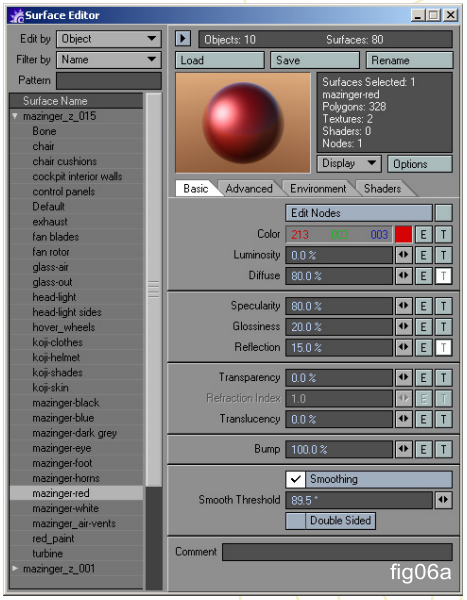


fig06a

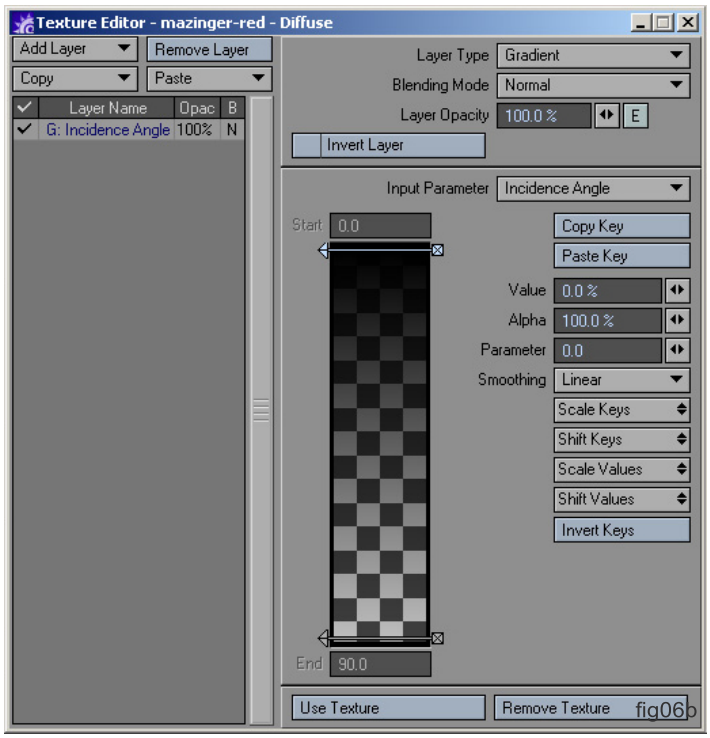


fig06b

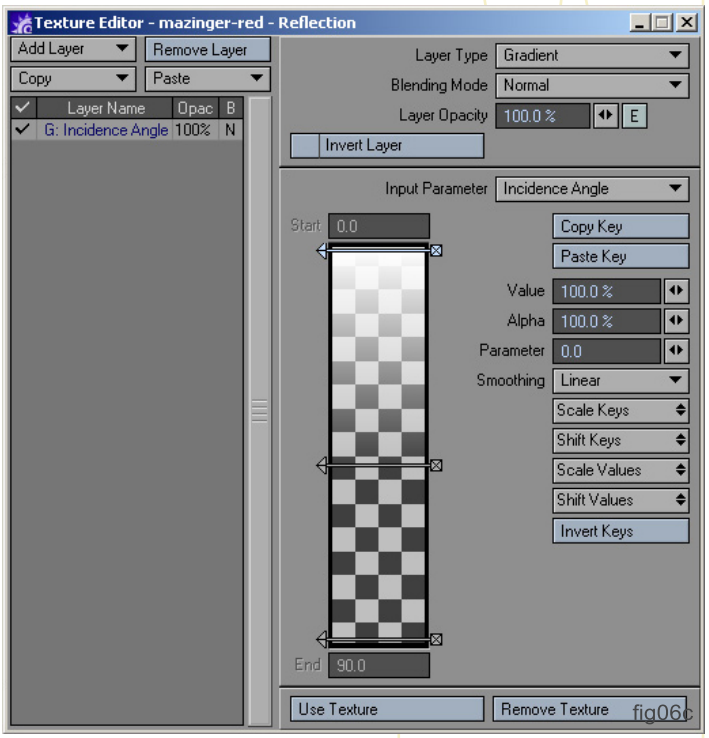


fig06c

Enemy Mecha (Fig.05)

The materials are, for the most part, gradients. I used several different gradients on the specular, diffuse and a special one in the reflection channel to mimic a fresnel effect. I also used some painted textures for dirt, scratches and other imperfections, but these are very subtle. I wanted to stay as close as possible to the show - Doublas M2 was no real match for Mazinger and therefore made very little damage and that is the reason I wanted to keep the textures very subtle.

Surface Editor (Fig.06a-c)

The gradients are doing most of the work in the shader. They all have a camera angle as an input parameter. At this point, I was ready to make some test renders to test the shaders, and very little fine tuning was necessary. Fig.08 shows the basic surface properties and the gradients used. Now I was ready to begin the lighting process, and this is what sells the image. Before I started lighting the scene, I came up with the elements that make the background. I found the perfect Mount Fuji image for this. Many battles took place at Mt. Fuji's skirt so it was just the perfect setting for the final image. I also picked a few images of clouds from my texture library; all these are

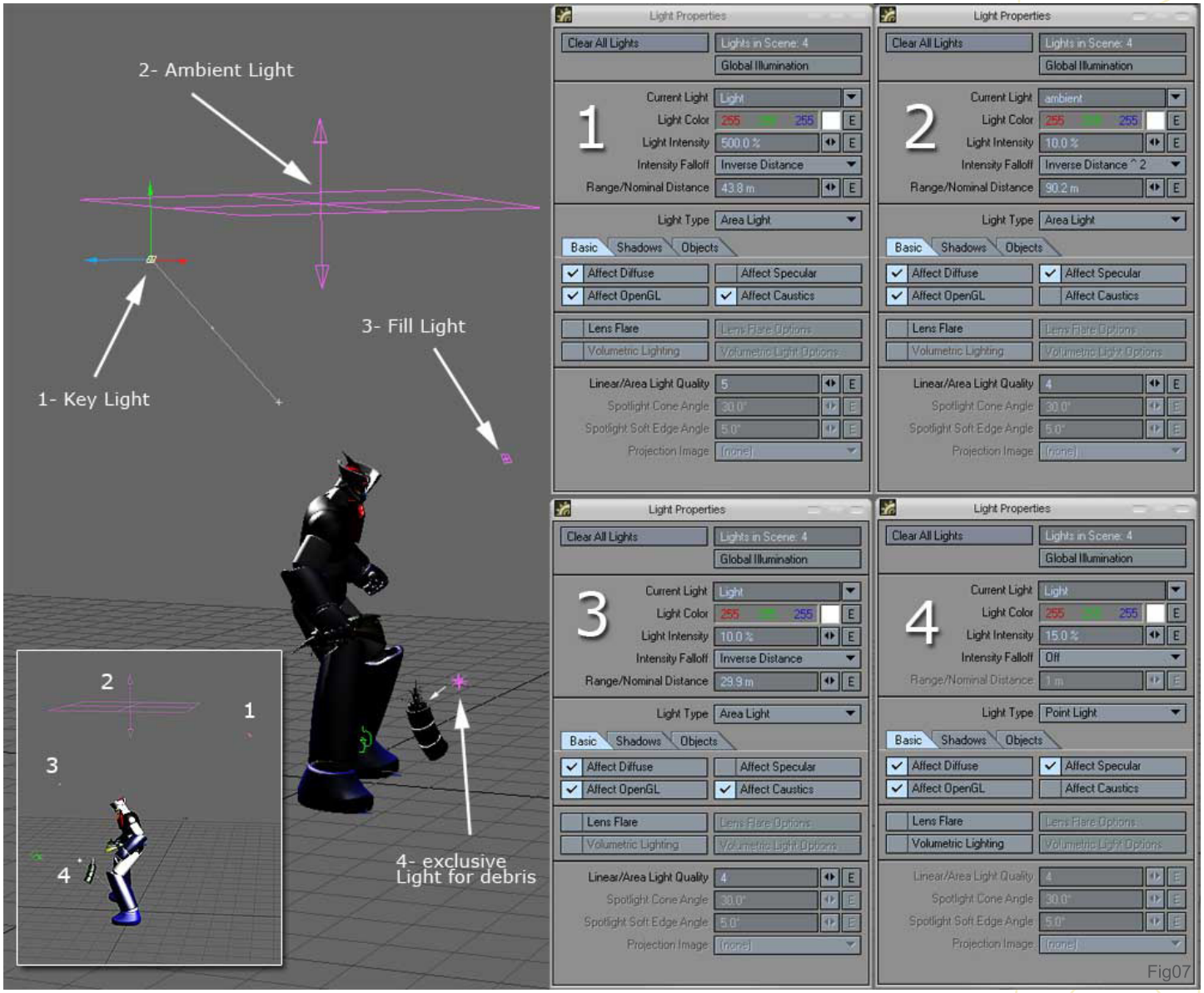


Fig07

going to be used in the compositing stage. With my background element figured out, I can get started with the lighting. This image gives me the general idea of where to go with my light rig. It was best to do a back light rig, the sun in my background element is coming from the top left, right behind my main subject. I positioned my key light behind and to the top of Mazinger's head. This will also help give Mazinger a sense of scale and presence since it will be blocking a lot of the light coming from the key light source. To finish off the daytime look, I placed a few fill lights around the scene and a dedicated light targeted to the recently destroyed enemy robot.

Light Rig (Fig.07)

F-Prime was a huge help whilst positioning the lights. I would get almost immediate feedback - no long test renderings anymore! I rendered a hi-res version of my scene using F-Prime's radiosity settings, using 2 bounces for this render. After the render was complete to my satisfaction, I brought all the elements into Photoshop, where I did the composition and also painted some extra details. I painted some scratch layers for the destroyed enemy robot's remains, and I also adjusted Mazinger's eyes to make him look more "alive". After all the layers were painted, I added some adjustment layers to fine tune the levels and added another one for curves. And that's it! It is really a simple image to make when you break it down into elements, and this is just one of my favourite images that I've created for fun. My true intent is to re-create the complete opening of the show, but it will take some time since I'm working on it on my spare time and I have other interesting ideas and concepts that I want to explore as well... Hopefully I'll finish it some time in the near future.



Finished Image (Fig.08)

I hope you enjoyed this article as much as I enjoyed writing it. Until the next one...

Angel Nieves

For more work from this artist please visit:

http://www.vertexangel.com/

or contact:

angeln@vertexangel.com

Fig08

DIGITAL ART MASTERS : VOL 2
CALL FOR ENTRIES



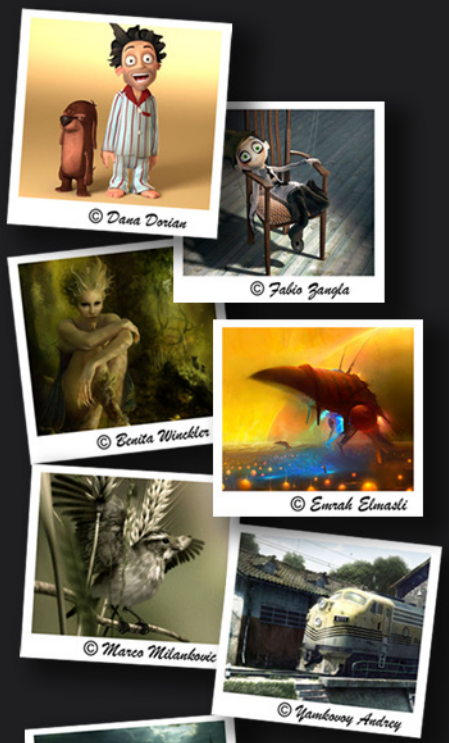
Recent 3DTotal gallery submissions shown on this page....examples of what we are looking for!

Following the success of our first book 'Digital Art Masters: vol 1' we would like to announce the 'Call for Entries' for the second book of the series;

'Digital Art Masters: vol 2'

Vol I' was 3DTotal's first book project which featured some of the best 3d & 2d artwork from such artists as Natascha Roeoesli, Philip Straub, Rob Chang, Jesse Sandifer, PiSONG, Meny Hilsenrad and Ryan Lim. The one thing that set 'Digital Art Masters' apart from other gallery/catalogue books, was the fact that we wanted to show the readers how the images were created, so each artist wrote a breakdown overview to accompany their piece in the book.





'Digital Art Masters: vol 2' will again be showcasing some of the finest 2d and 3d images from talented artists across the globe. Initial submissions need to be of your final image only to enable entrance into the selection process. Chosen artists then need to supply an additional text overview with 'making of' and 'work in progress' images. See samples at bottom of page to give you a good idea of what is required.

If you think you have what it takes then go here for the full information and submission process details:

http://www.3dtotal.com/services/digital_art_masters/volume2/call_for_entries.asp

Estimated Book Launch : May / June 2007

Related links - 'Digital Art Masters : vol 1' Details and Purchase Details here







Follow the process of how Jeremiah Strong makes his fantastic specular maps on this peice of work, ‘Jungle Mech’...

This is going to be less of a tutorial about how I made the Jungle Mech, and more about the process and the ideas of things that you have to look for when creating a 3D, or any art piece. I started this Mech a while ago when I first was learning 3D and had no concept of things like form, shape and consistency. Specular maps were a mystery to me and so were unwrapping textures.

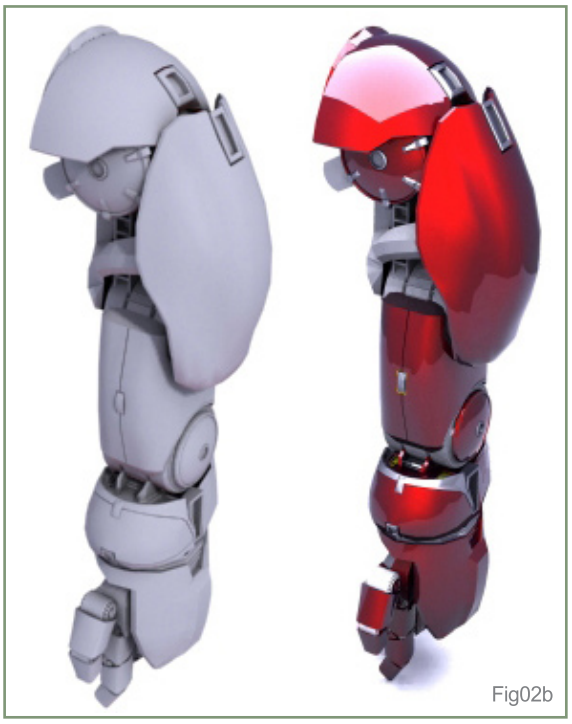


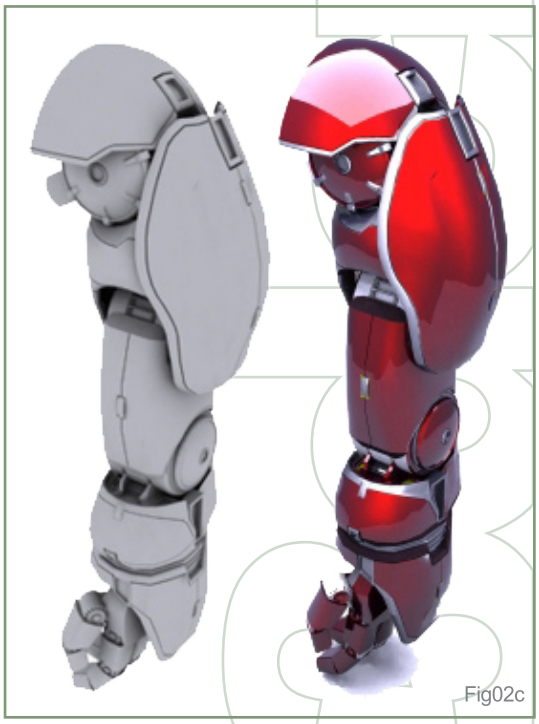
Fig01

In Fig.01 you can see my "final" Mech, that I had done a few years prior. A mishmash of parts, all thrown together as if someone had found random parts in a junkyard and threw them together and hoped that they worked. I left this guy to rest for a while and learned a lot about form, shape, and consistency in my artwork. I decided to remake most of him and keep the same basic shape. I chose an existing part of the model that I liked - the upper arm guard shoulder area - and decided to expand on that. I took the fine lines and the thick border style with the not-too-sharp corners and heavily rounded edges - a futuristic sleek look.

In Fig.02 a, b and c you can see the progress from the old arm, with no real style and flow, that I expanded on the area that I selected. I tried to


Fig02a


Fig02b


Fig02c

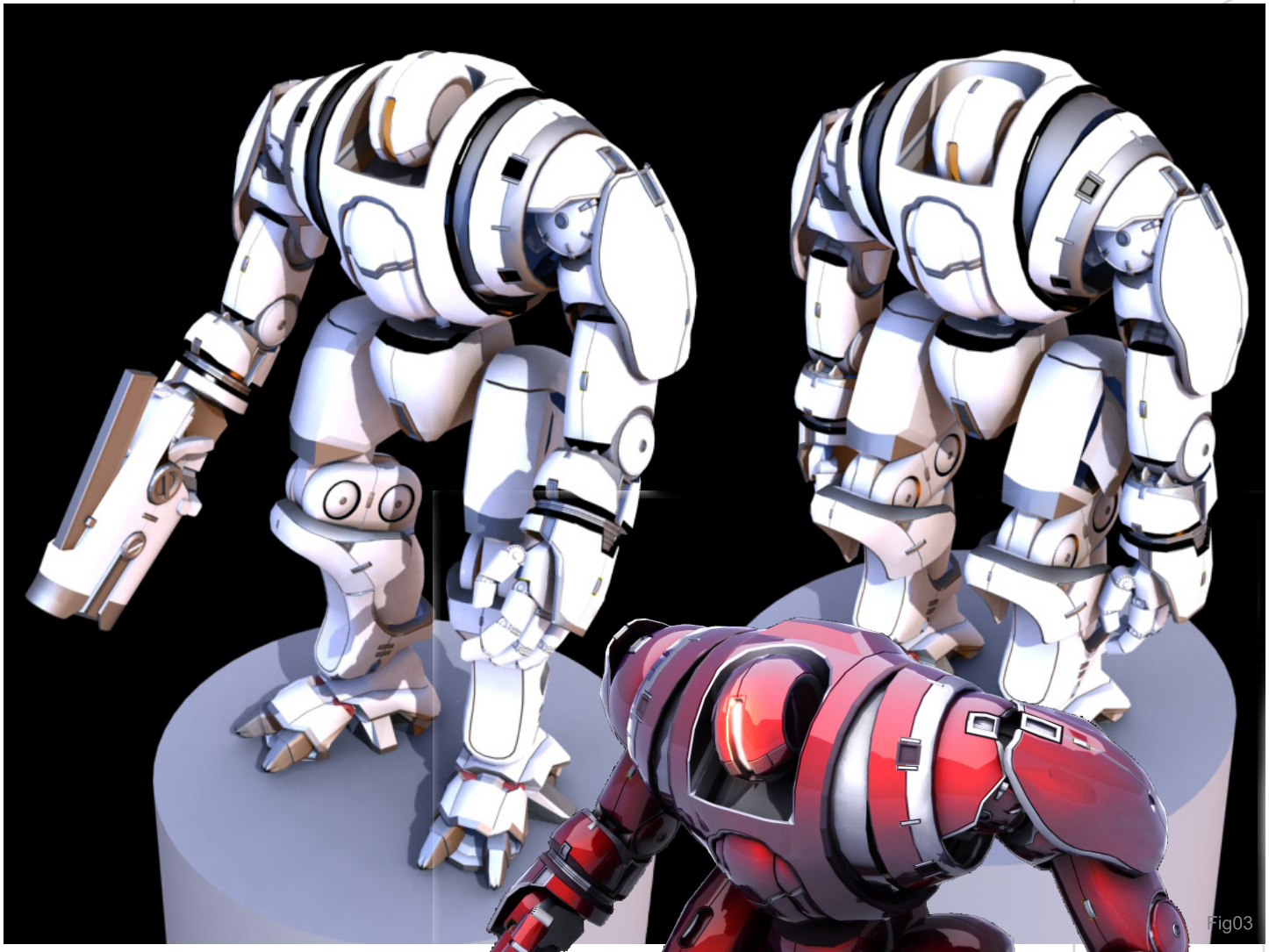
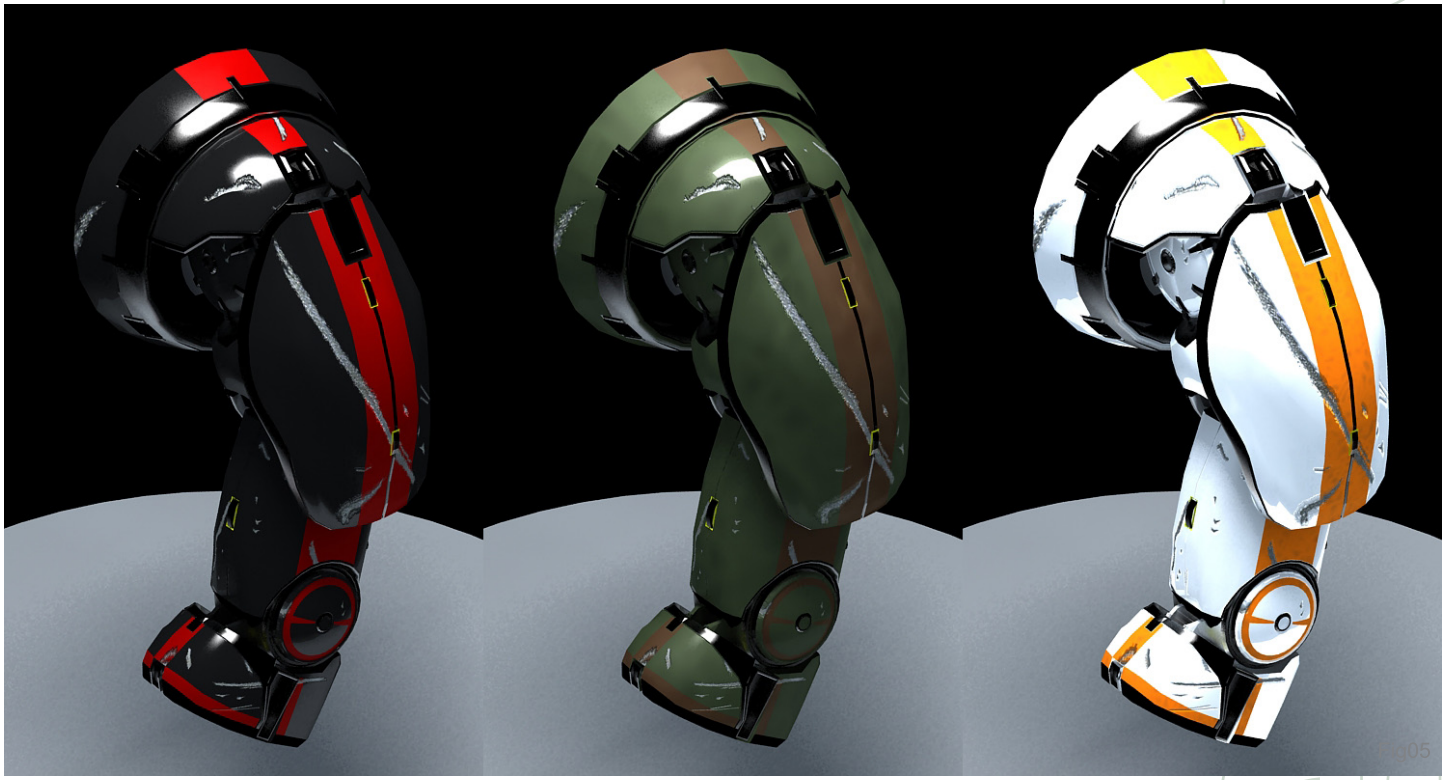


Fig03

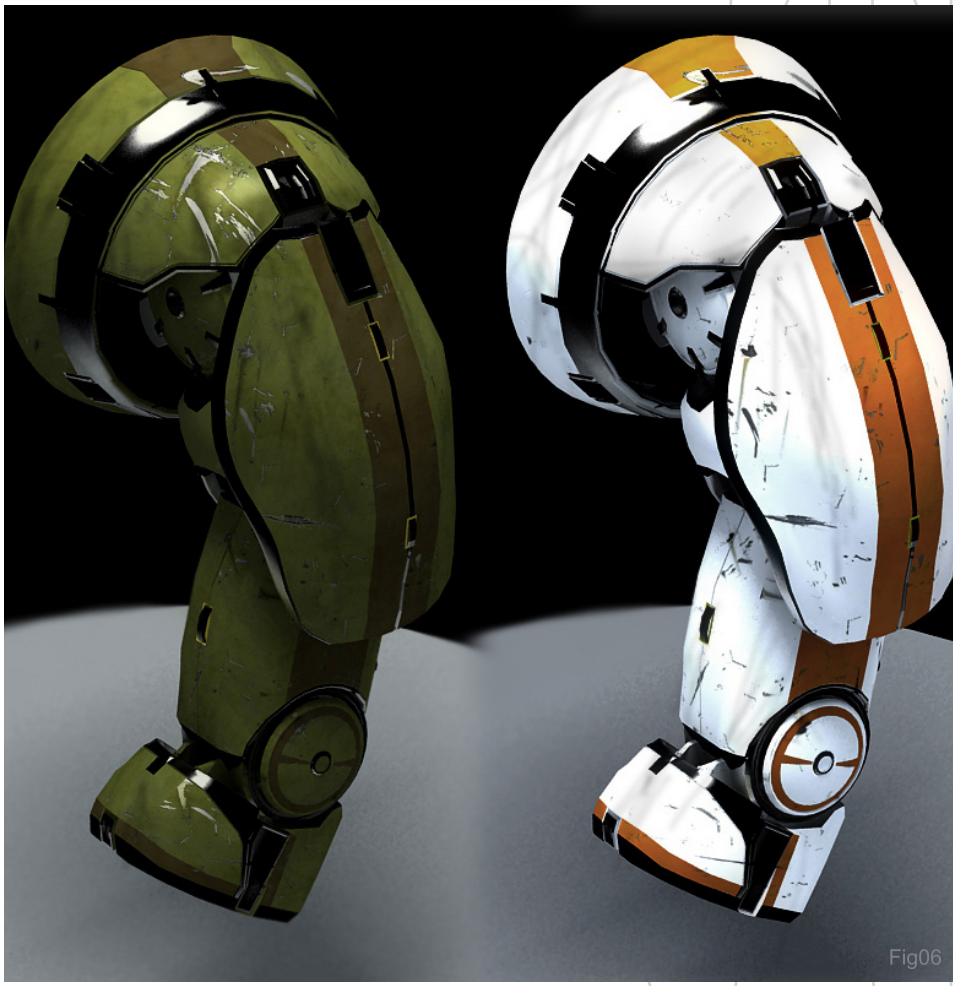
make the other parts match the selected area, keeping good-looking proportions and adding consistent detail, as opposed to a cool-looking grate over here and a cool-looking, random piston over there. I chose to have latches that hold the armour in place all around the Mech. On the third arm, I decided to expand on the style I was going for and add a lot more detail to really make his parts stand out.

In Fig.03, you can see the same concept has been applied to the majority of the rest of the Mech. In the process of remodelling the Mech, I decided to make every part able to work without clipping. I added some extra joints to the shoulder for added movement, and started to define its different state, as well as defining the different materials that it would be made out of. In Fig.04, you can see the nearly completed model with just a basic car paint texture on it. The colours and the texturing were the next step that needed to be done.

Fig04



I first started to pick the two colours that I wanted most of the Mech to be, and started to define the general tone of the Mech. In Fig.05, I'm just getting the feel for what he is going to look like and applying some basic procedural textures to it. Then comes the fun part of unwrapping textures. In Photoshop, I started with a base metal, similar to those found in the 3DTotal Textures Collection. From there, I added tons of scratches, marks and general grunge, by finding references on-line of wear and tear (Fig.06).



I used Vray to render and light the scene; just one Vray plane light illuminates it. I rendered after matching the light to the background. As you can see from Fig.07, there is a lot of work left to do. Vray had some errors and blocked some things out, but that's nothing Photoshop can't fix. This was the last time my model saw some 3D work to it.







Next I added in the background and foreground and did some colour corrections. As my friend put it, “Go crazy with the Wacom”. Symbols and more scratches were added in Photoshop, Japanese characters and latches, bumps panels and colour adjustments to individual parts, reflection of the lights, glows to the face, caution stripes and various other things, to give it much more scale. As you can see, all the little details made a huge difference (and of course the magnificent stamp tool) (Fig.07&08).

Fig08

The Photoshop layer styles are your best friend in the process, as they help you to realistically blend very well. Remember to get lots of metal references and some good base metals, dents and scratches. Movies are also a good source of what to look for. Make sure to keep what you want in focus and don't let the little details distract you.

(Fig.09: Final image)

Jeremiah Strong

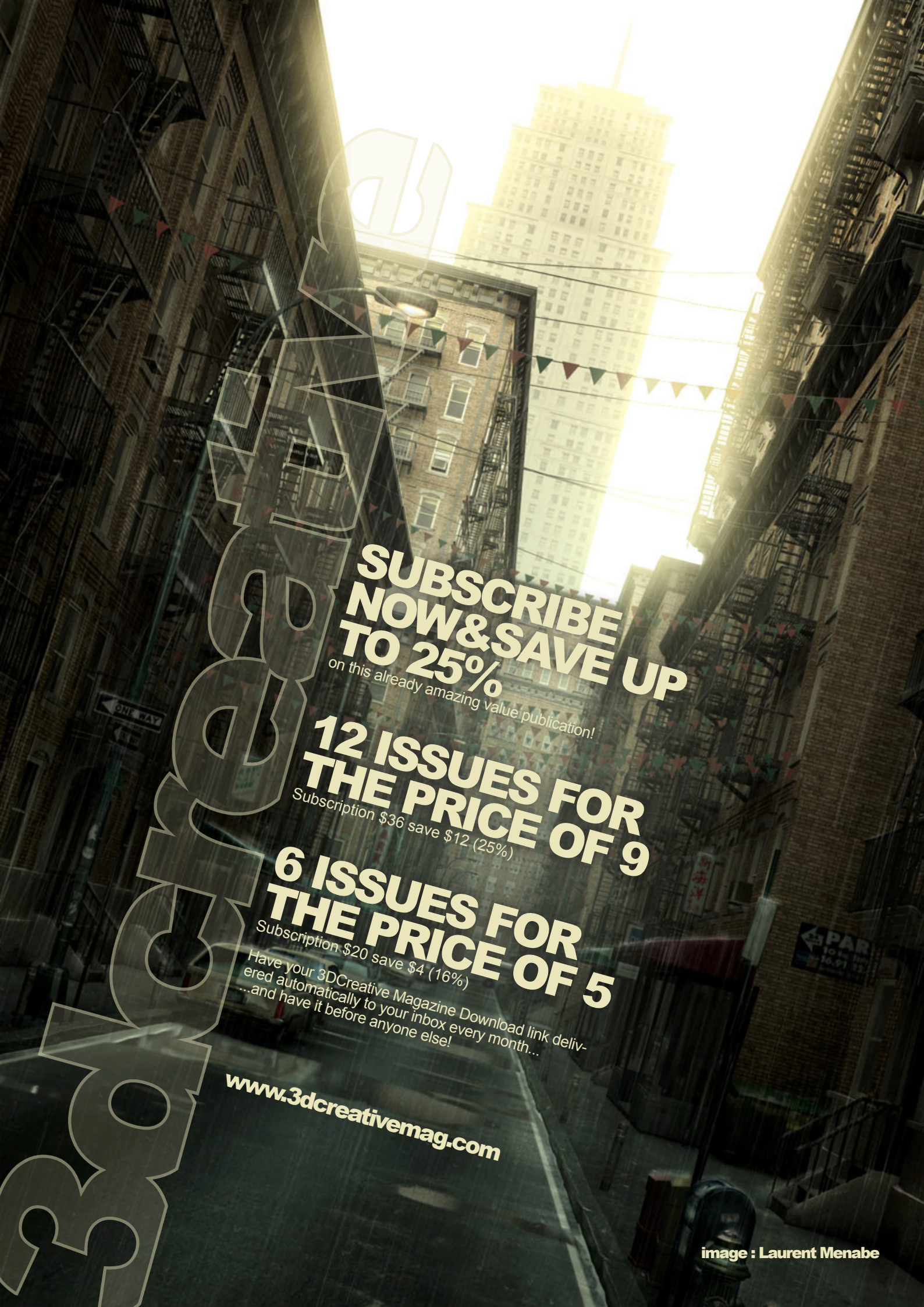
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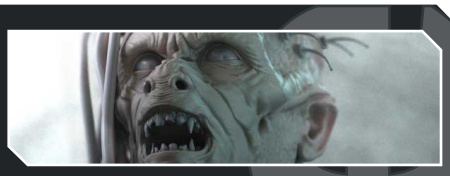

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SMOKING CREATURE

MAKING OF

In this tutorial, Marco Menco will explain how he created the image, “Smoking Creature”, starting from the head of one of his last models...



SMOKING CREATURE

Smoking Creature was modelled directly in Z-Brush, rendered in Softimage XSI, with post-production painting work done in Photoshop. The modelling of the base mesh (Dante Alighieri) was done in XSI, starting from the shape of the eye. With the head ready, I experimented with Z-Brush, using it as a sort of sketch pad (Fig.01), changing the shape (Fig.02) and adding some scales on the head, using the grey mask on a medium subdivision

Fig01

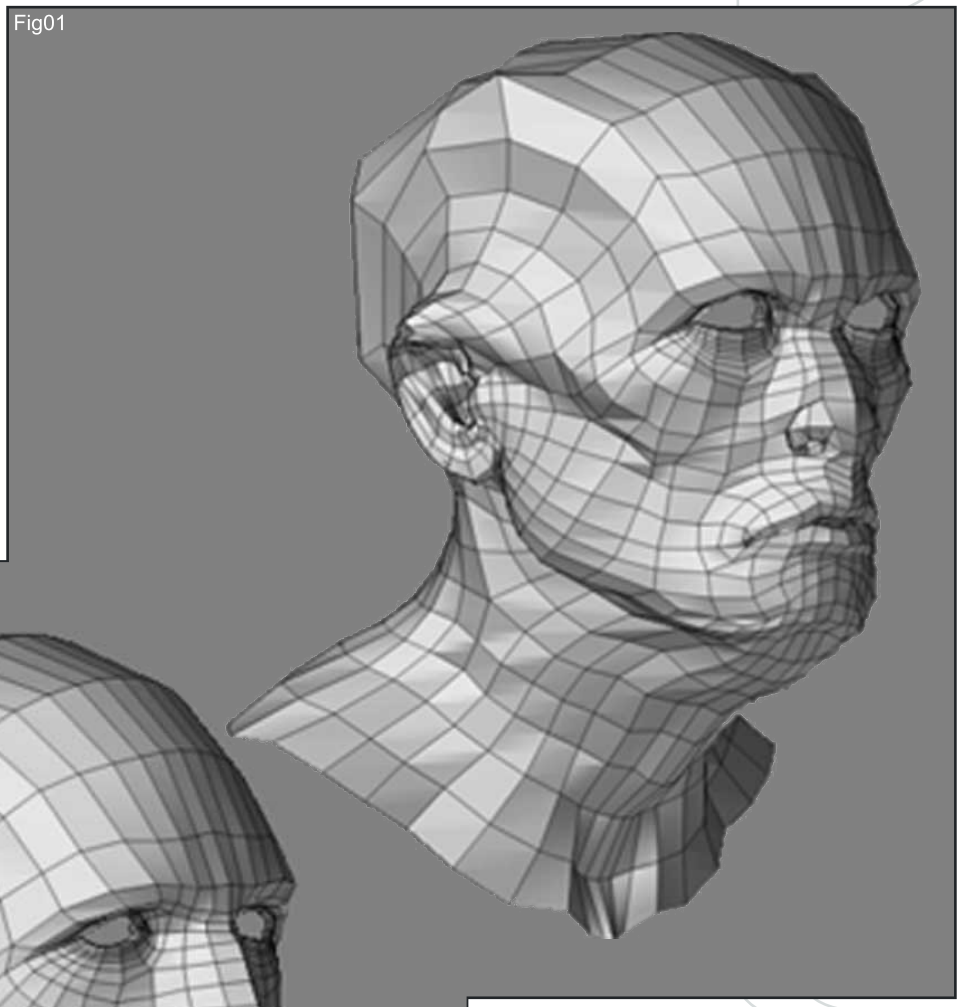


Fig02

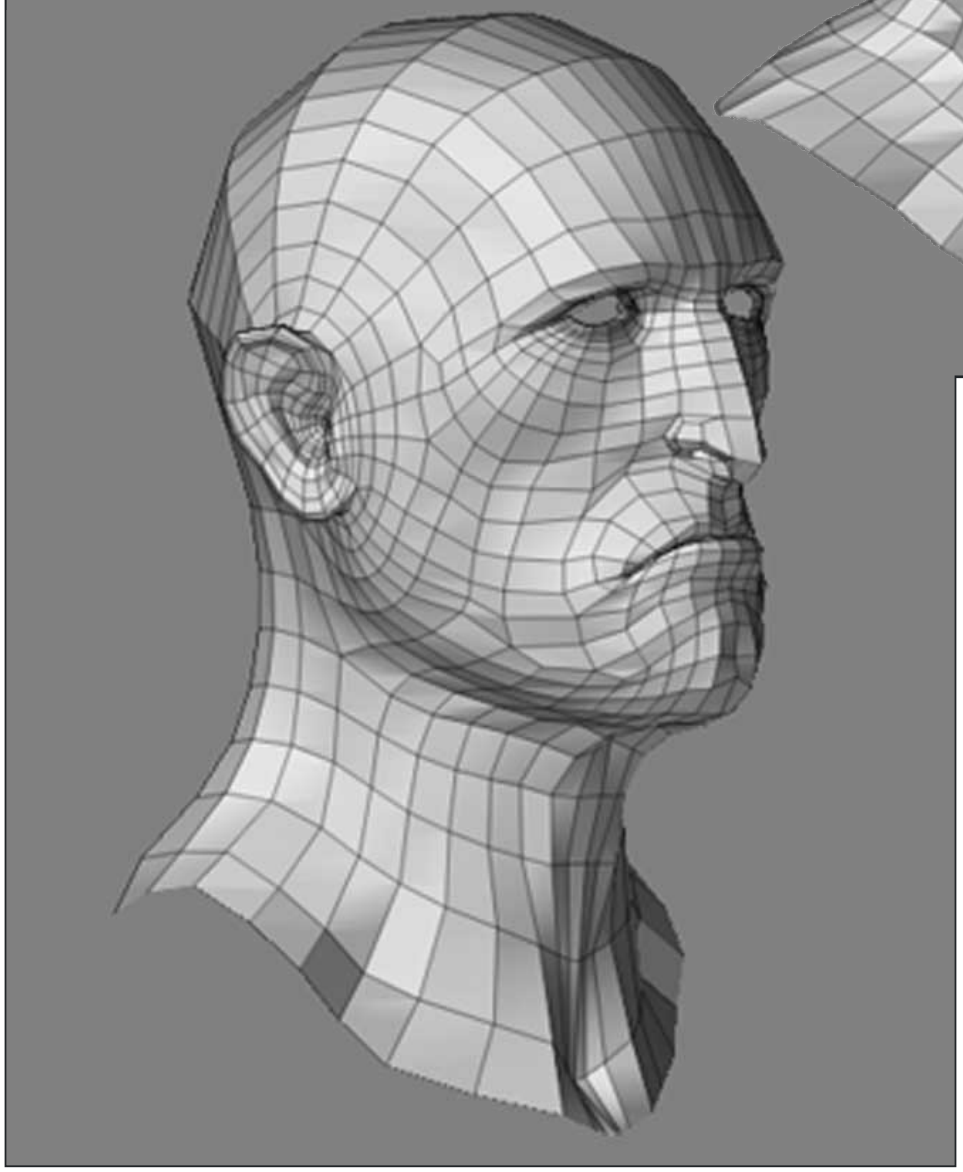
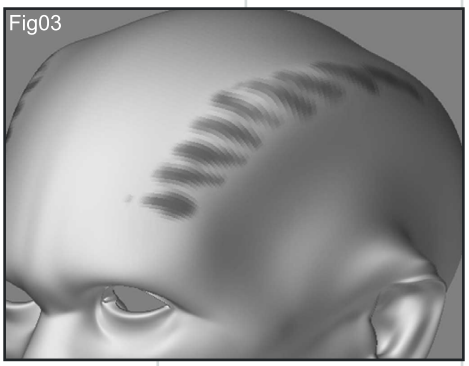


Fig03



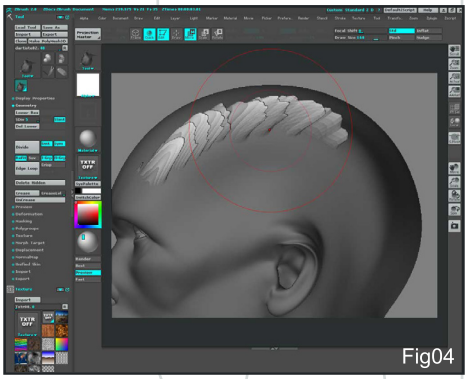
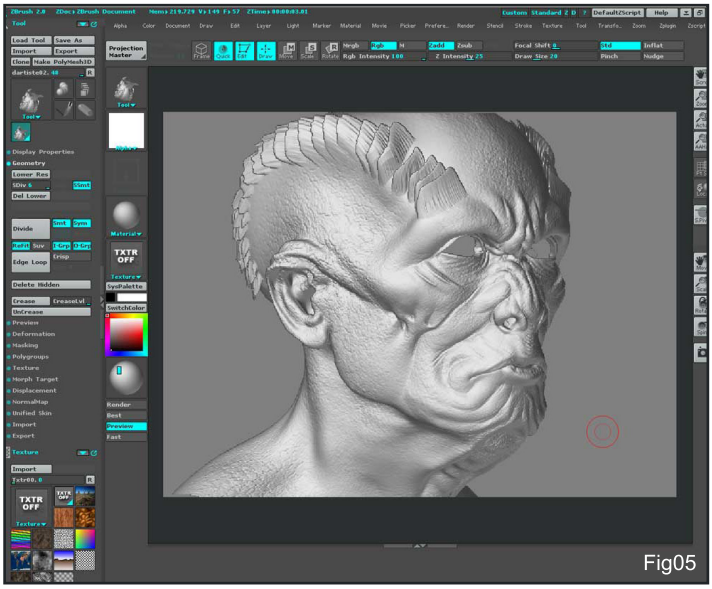
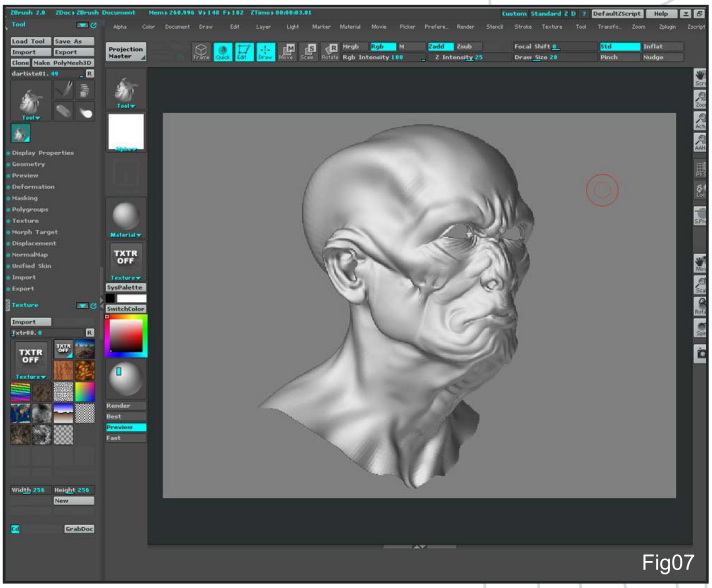


Fig04


Fig05


Fig07

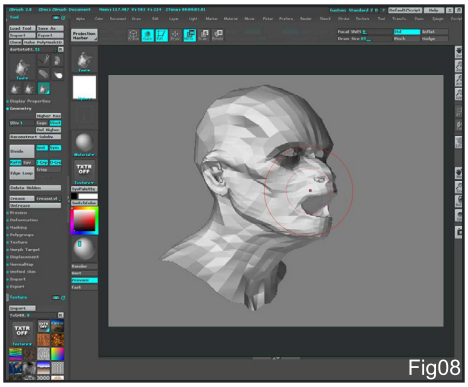
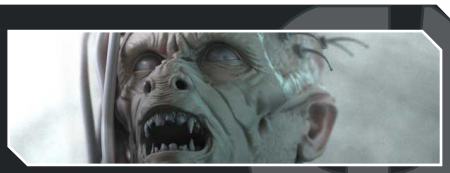

Fig08


Fig06

level (Fig.03&04). After that, I went ahead with the modelling and, at the highest subdivision level, I started to add the smaller, finer details on the face, and other little scales, using the “projection master” (Fig.05). I exported the 5th subdivision level (6th was the highest) to OBJ and I prepared the head for a test render in XSI (I’d like to export the 6th subdivision level, but the computer goes crazy). Once I positioned the lights and adjusted the shaders, I did a region (Fig.06). This was the first test, but I was not satisfied and I decided to change the shape of the face. I went into Z-Brush again and opened the last file, which I saved without the small details on the head (Fig.07), and I went to the first subdivision level. After having done a grey mask around the eyes, to not involve their shape on the transformation, I used the “move” button, with a big focus on the brush, to remodel the face and open up the mouth (Fig.08).



I then went on to finish modelling the head, using the “projection master”, to do scabs on the upper part. As you can see, I also opened holes to prepare space for some tubes (Fig.09). It is now the time to leave Z-Brush and prepare the model for the final render. I exported the 5th subdivision level, as I did before with the other head, and I opened it in XSI. I modelled a “connector” and a small “antenna” (Fig.10), then I cloned them for the head holes on the right-side. Then, using the “extruding by curves” method, I interlaced the tubes on the

Fig09

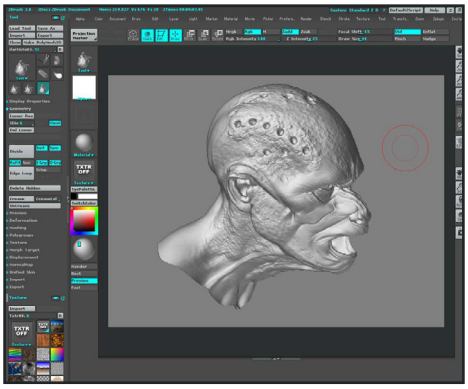


Fig10

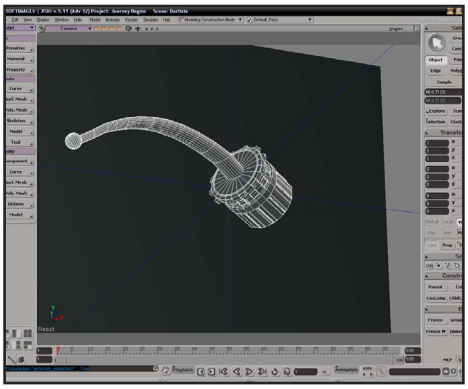


Fig11

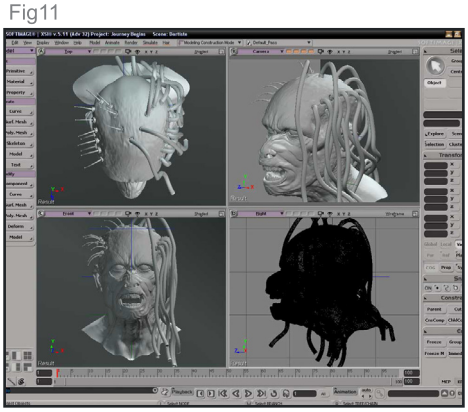
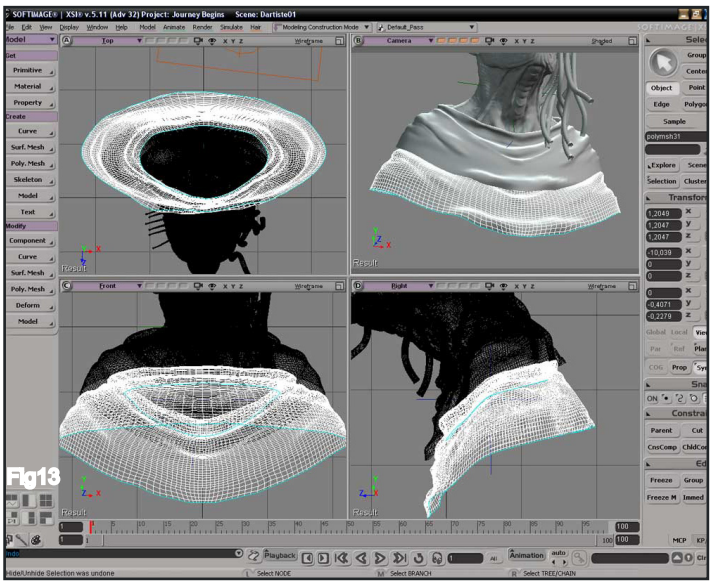
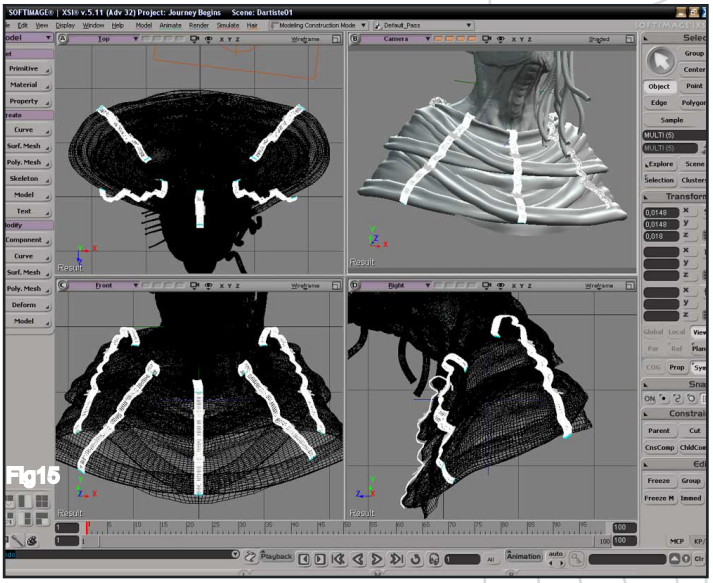
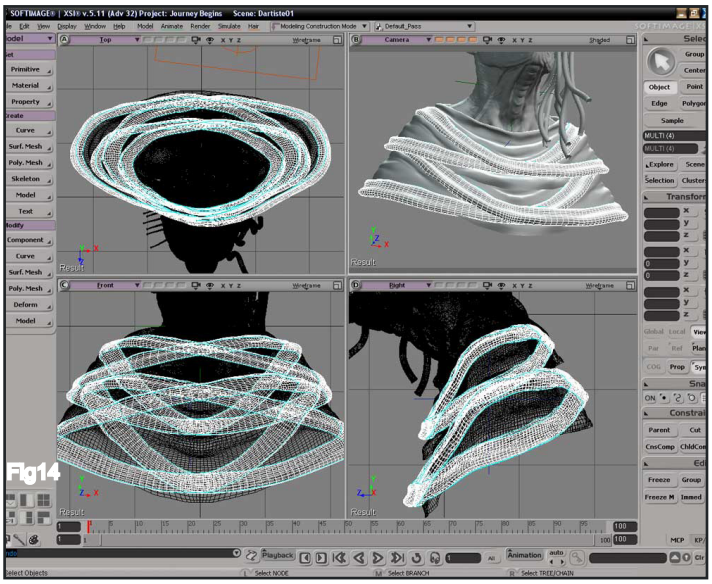


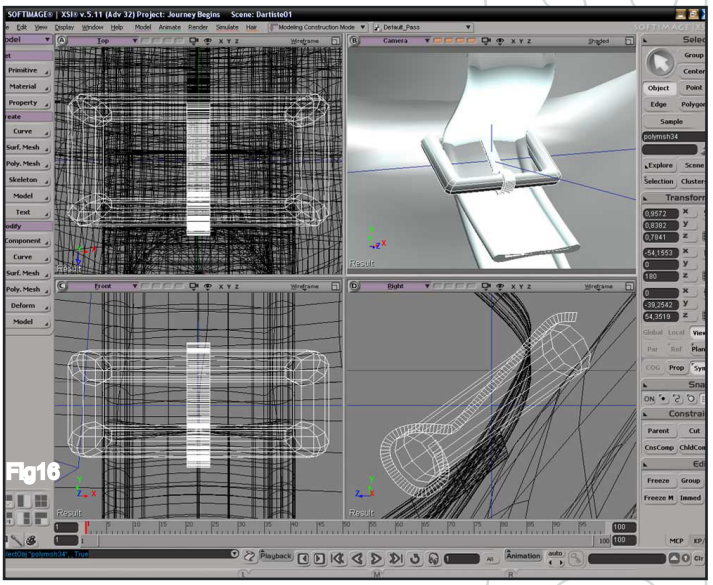
Fig12



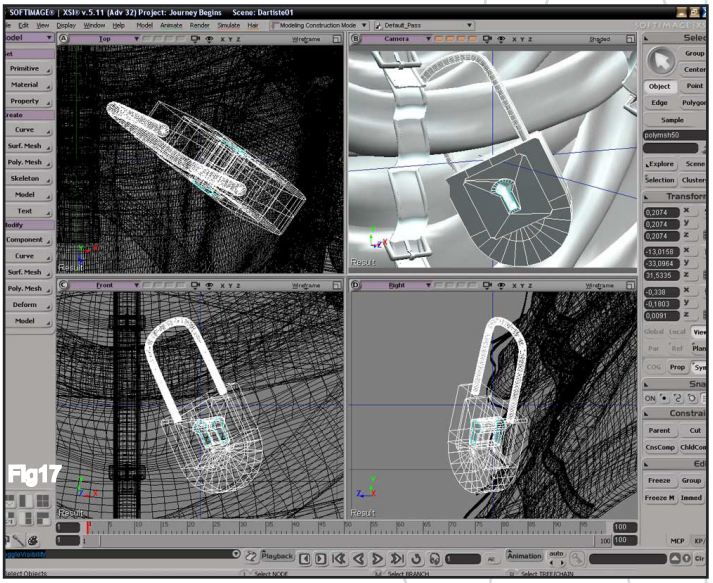


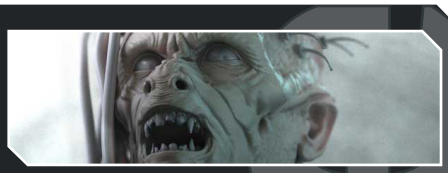




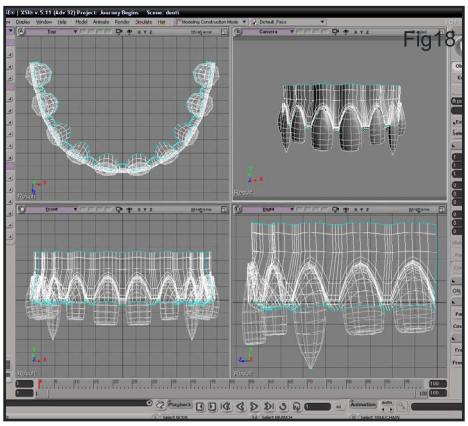


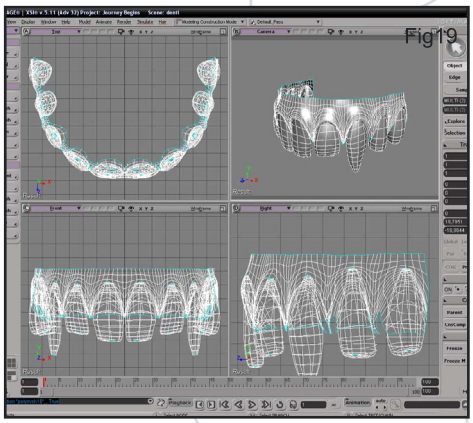
left side of the head (Fig.11). I then did a region, after having positioned lights and limbo (Fig.12). Then, after having modelled a low poly cloth on the shoulders, I exported this mesh to Z-Brush and I played a little with it to obtain a nice result. I re-imported the cloth in XSI, using the 3rd subdivision level, and cloned it to continue the body (Fig.13). The bands around the body are done in the same way as the cloth (Fig.14). The belts with buckles on the body were done in the same way as the tubes (Fig.15&16) and the padlock (Fig.17).





Because I used an old model for the teeth, I decided to remodel them again - hoping for better results. I started in XSI (Fig.18), fixed their shape in Z-Brush, and re-imported them in XSI (Fig.19). After having done some regions to test lights, I decided to add a volumised effect on the spot that was the key light (Fig.20).


Fig18


Fig19

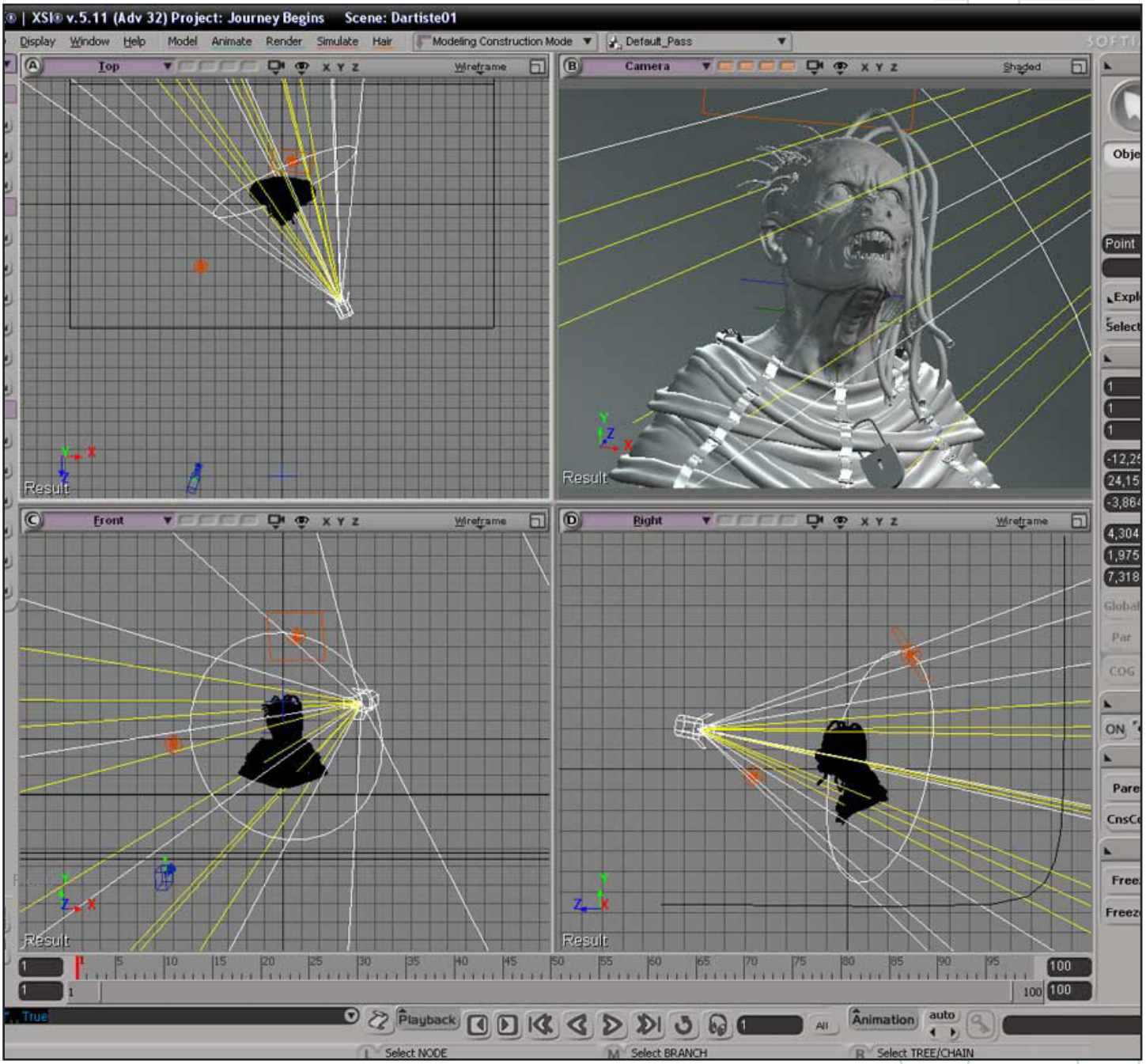


Fig21



Fig22



I did 3 passes; one for the occlusion, one for the z-depth and one for the beauty pass (Fig21, 22 & 23).

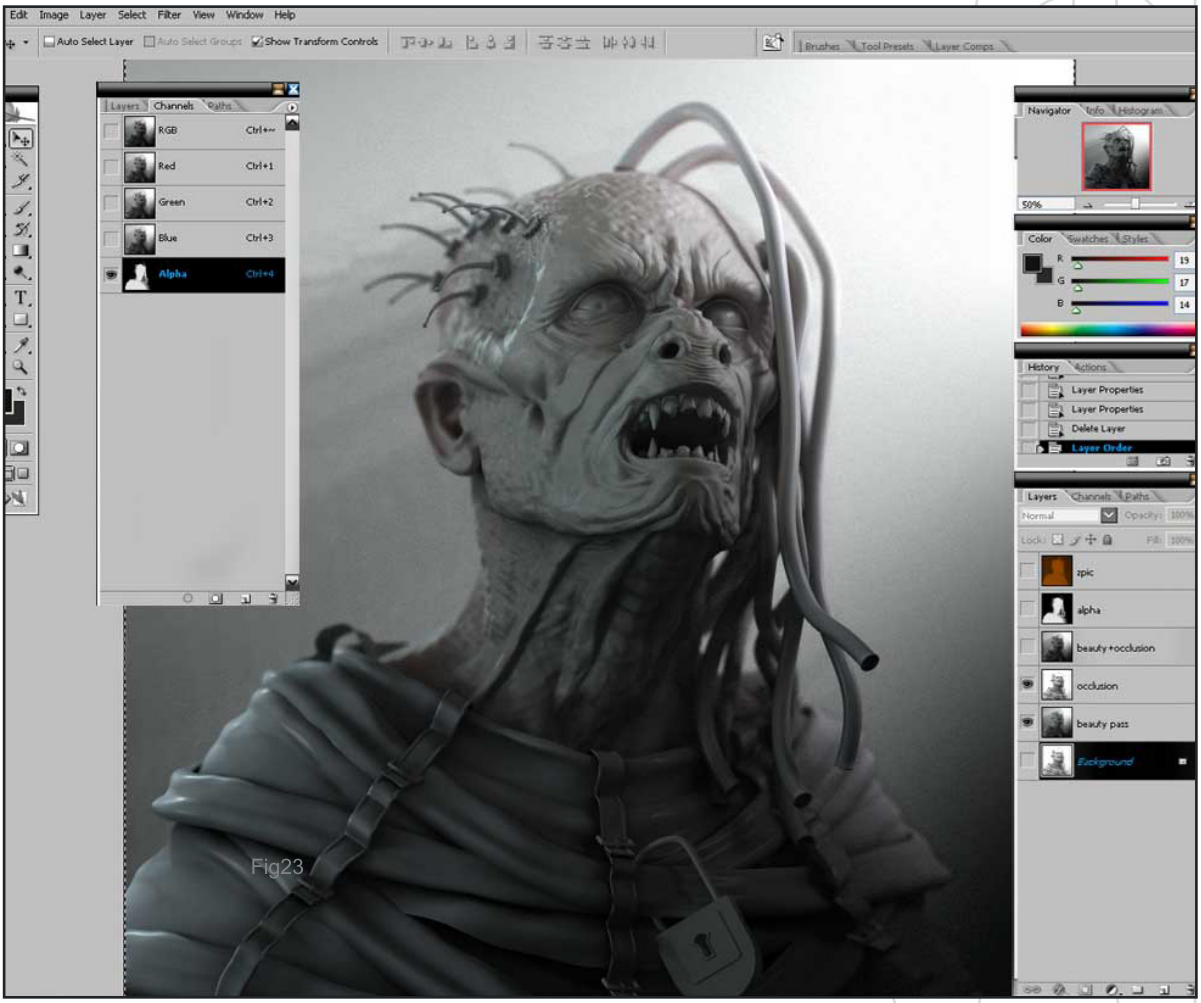
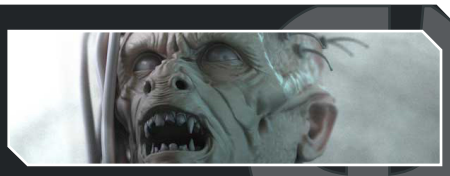


Fig23



As you can see on the last image, I opened all the passes in Photoshop to do the compositing and some smoke. I created a new alpha channel, where I pasted the z-pic, and by levels, I adjusted the blur that was achieved with the “lens blur” filter. The ambient occlusion layer was multiplied over the beauty pass and then merged. I did the background smoke with filter>render>clouds, and I created the lighting effect with filter>render>lighting effects. I then did a selection on this layer using the alpha channel, to delete the smoke on the model and leave it on the background (Fig.24). Then I painted more smoke on the right shoulder to make the creature immersed and integrated within the scene, and added some more smoke floating from the tubes. As a final touch, I corrected the colours of the creature layer (Fig.25).

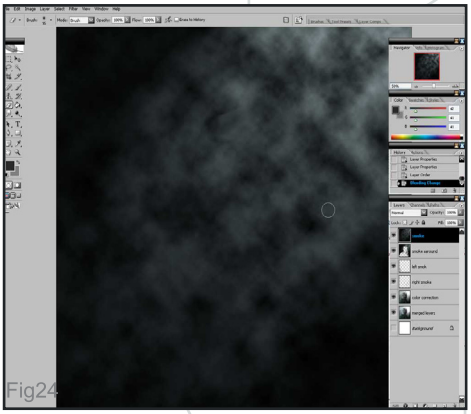


Fig24

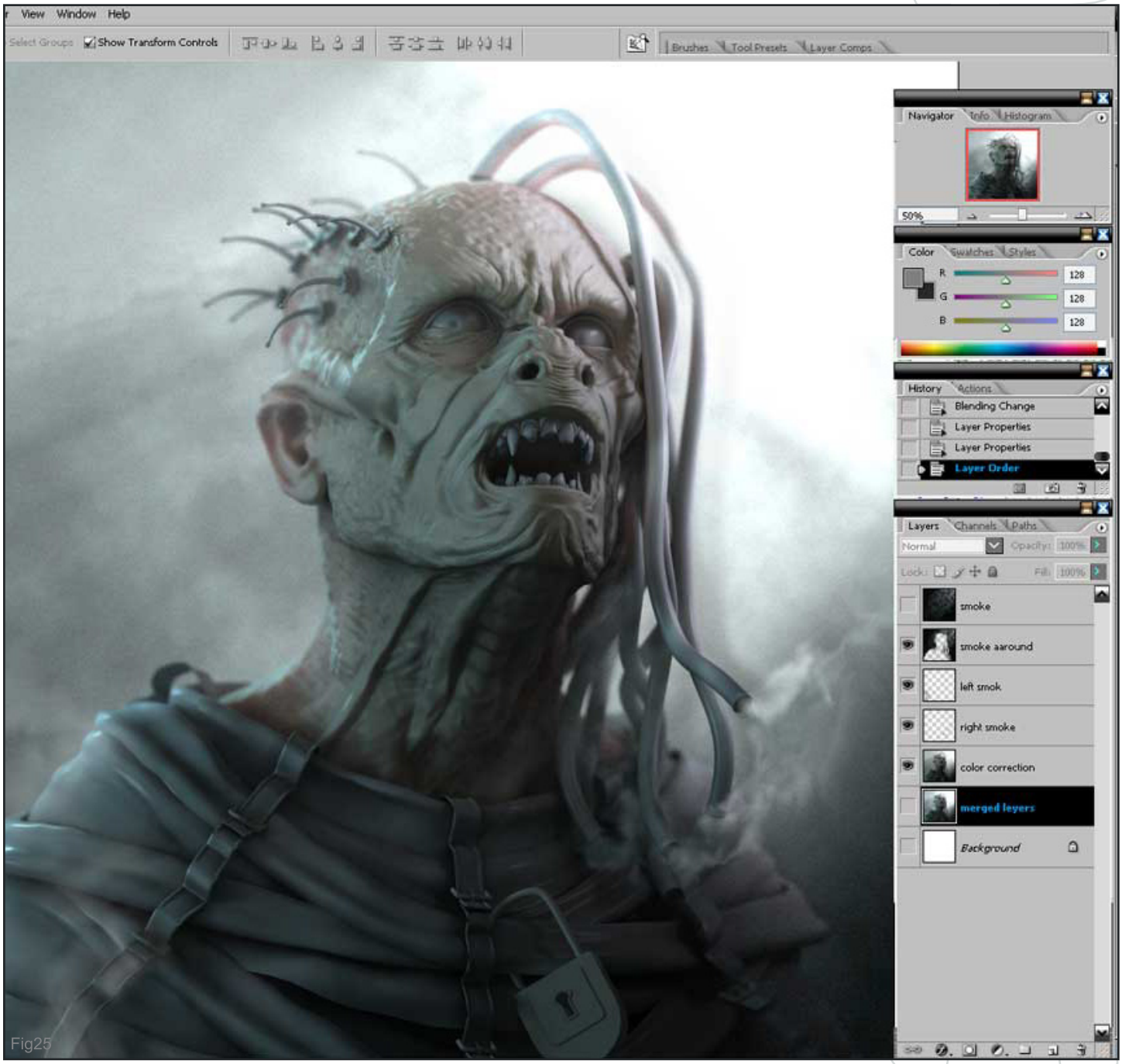
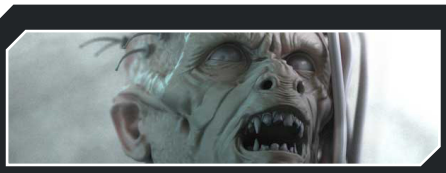


Fig25

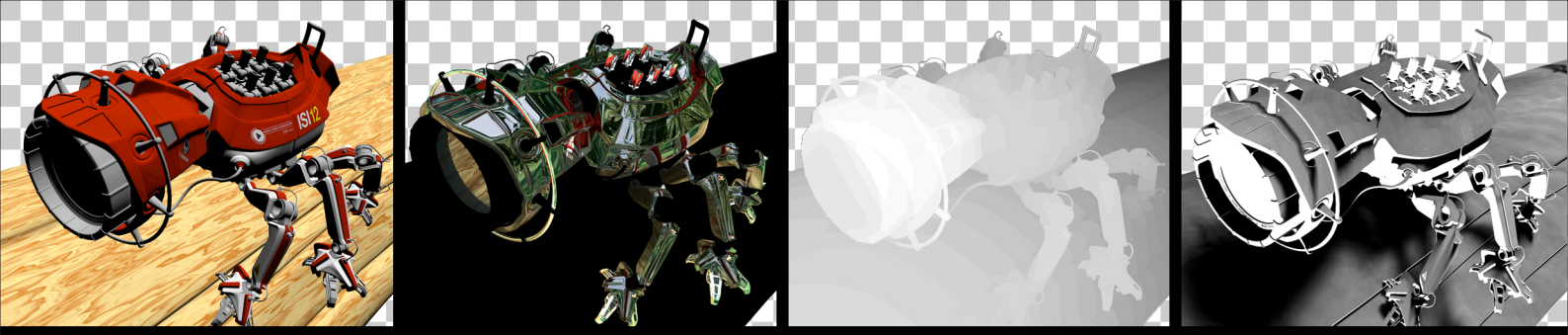


With thanks to my girlfriend, Vivien Hulbert, who loves and believes in me, and to the staff at 3DTotal.

MARCO MENCO

For more work from this artist please contact:

drummermenco@yahoo.it



THE POWER OF LAYERS



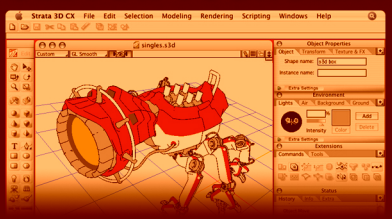
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Here we see how Marcin created his 'Thinker', using a combination of 3DS Max and Z-Brush...

making of THINKER

Basic net creation

The basic mesh of the 'Thinker' is prepared in 3DS Max 8 and is therefore modelled in the "T" position, with his arms spread. Such a position will facilitate the further process of adapting the figure to its virtual skeleton. In order to achieve the sitting posture, we use the tools and modifiers included in the basic version of 3DS Max software. First of all, we need to rig the figure ('rigging'), where the biped animation system proves helpful: 'Command Panel>Systems>Biped' (Fig.01). We insert the biped and adapt its size to our figure. To attach the virtual skeleton, we use the 'skin' modifier. Next we add all the bones, 'Bones>Add', pointing out the whole biped hierarchy. Then, by means of the skin modifier options, we wag the vertexes (Fig.02). This is done with the help of the 'edit envelope' option, and the 'paint envelope' tool. We set the size and pressure of the brush. Whilst painting, we follow the net lines, marking the bones and their movement scope within the mesh (Fig.03). When the figure is properly wagged - i.e. when the net is correctly laid in the inflection points, for example, under the knee - we proceed to set our figure in the sitting pose. Here, the 'motion' mark will be helpful, which is accessed through the command panel, and includes all the biped options (Fig.04). After the figure is set in the proper pose, we export it into the Z-Bbrush, 'File>Export', using the '*.obj' extension.

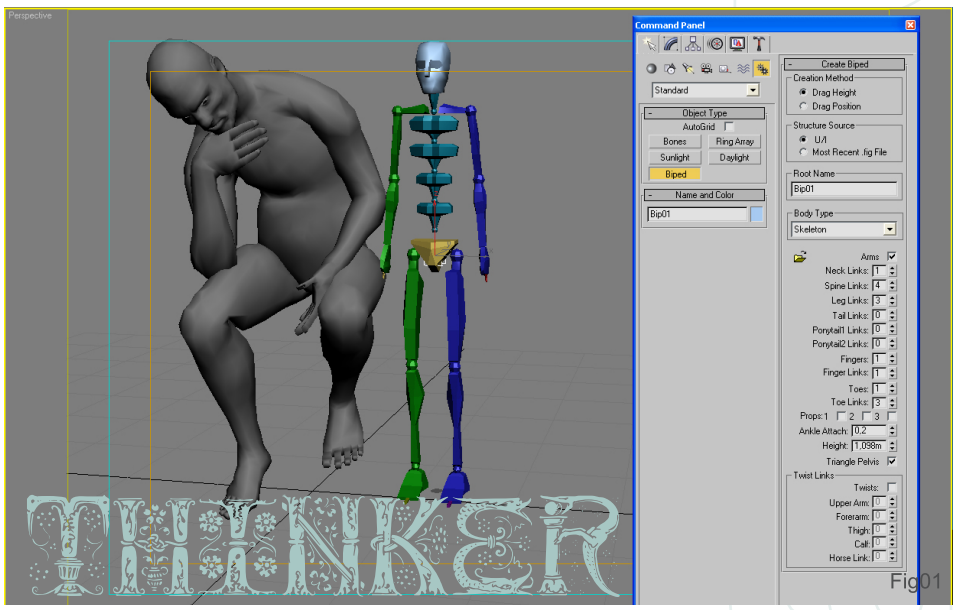


Fig01

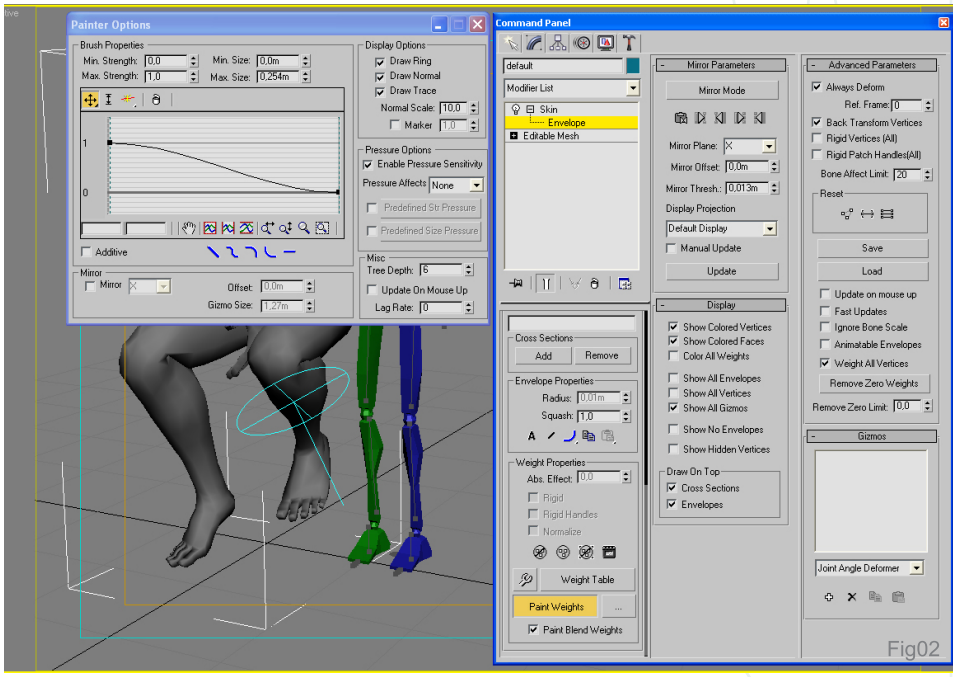
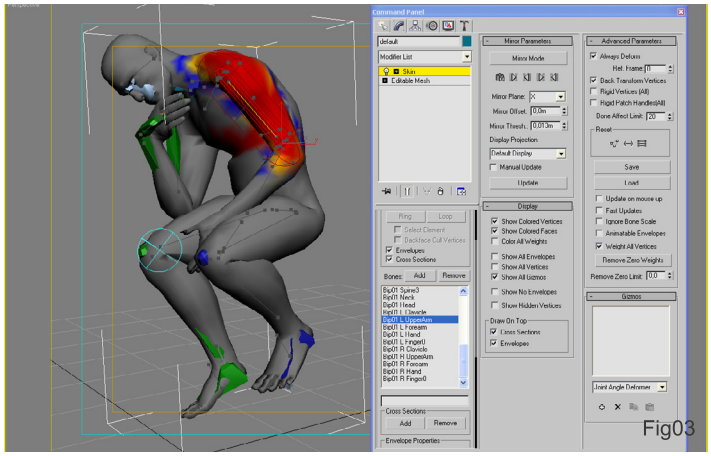
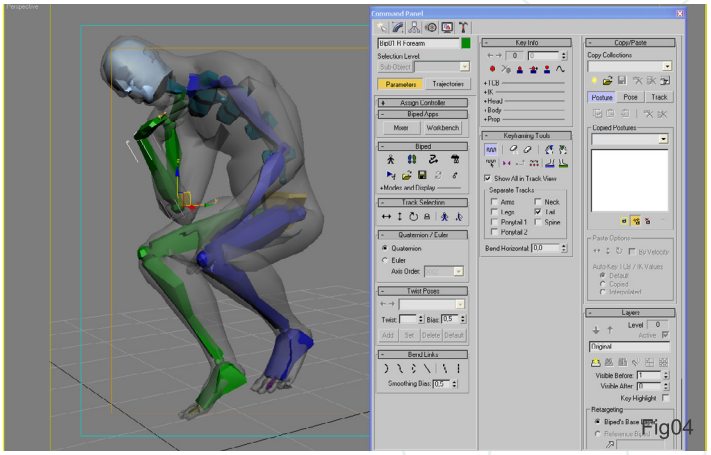


Fig02


Fig03


Fig04

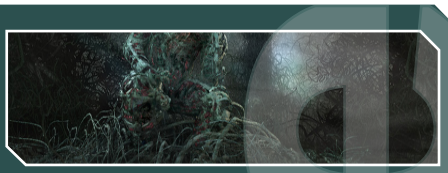



Fig05

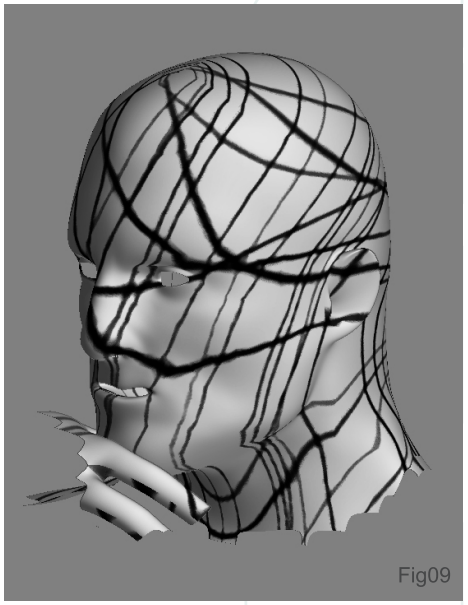

Fig06

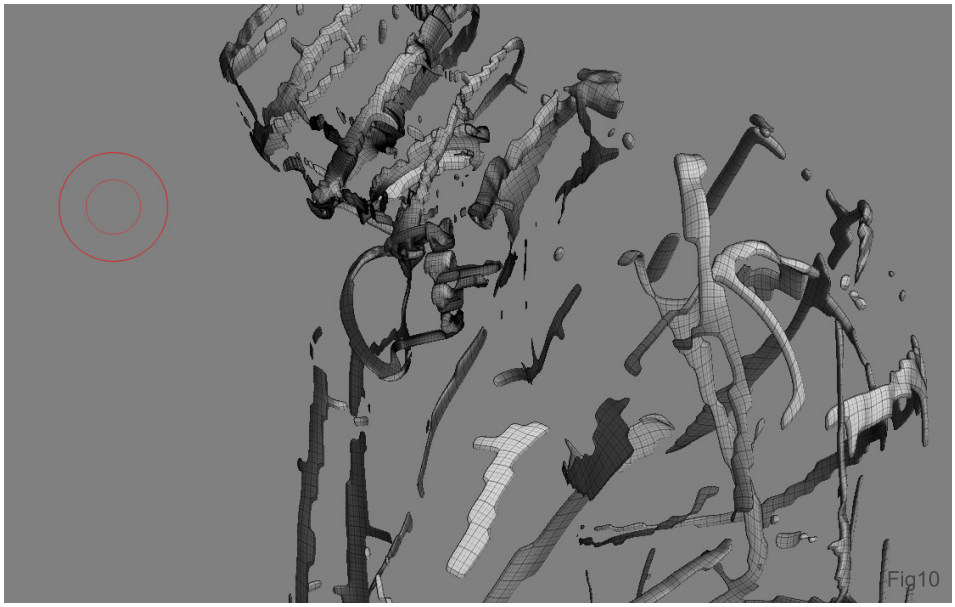

Fig07

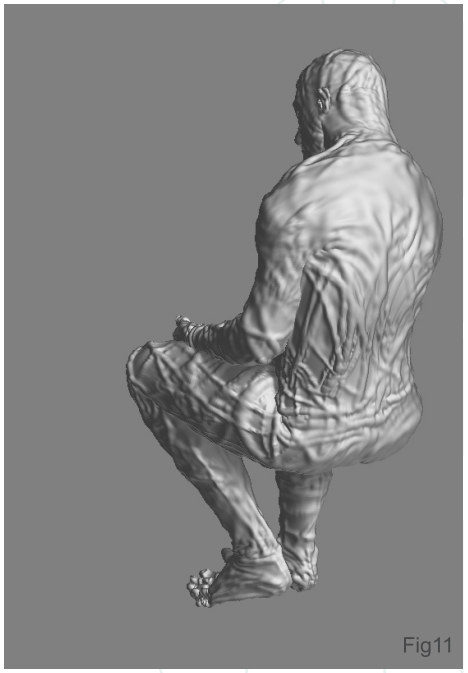
Figure modelling in Zbrush

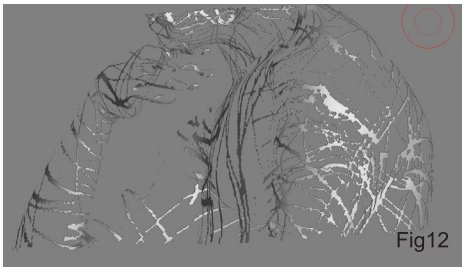
Whilst importing our figure, it is important to keep up the maximal UV settings. In order to achieve this, we click the "..." mark and then the 'store morph target'. Now we can multiply and modify the net by means of the 'divide' option. Depending on our hardware quality, we can reach the 5. or 6. level. We apply different masks to our figure (pre-prepared in Photoshop) (Fig.05-07). These black-and-white masks will determine the lines that create the wire shape of our figure (Fig.08). Now, having applied the masks, we press the 'INT' button from the mask palette ('tool>masking'), then we hide masking polygons ('Hide PT' button) and delete ('Del


Fig08


Fig09


Fig10


Fig11


Fig12

Lower') (Fig.09). In order to give some thickness to our mesh, we store morph target, and then use the 'inflate' and 'smooth' modifiers. Creating the depth by clicking on 'CreateDiff' button in the 'Morph Target' menu (Fig.10), we obtain the wire nets with density, defined by the masks we used (Fig.11). In this way, we generate several nets (I prepared seven) and export them to Max with the '*.obj' extension. Finally we arrange them, importing all the nets to Max (Fig.12).

Two-stage wire modelling

The 3DS Max simulations will be helpful whilst preparing the twisted wires. We draw several lines: 'Create>Shapes>Line' (Fig.13). In order to make the lines visible in the 'Renderer' and 'Viewport', the 'Enable' option must be marked in the Renderer, as well as the 'Enable' option in Viewport. In the 'Interpolation' mark we also need to click on the 'Adaptive' button. The next stage is copying the lines in order to achieve varied thickness (the 'Thickness' parameter is changed in the 'Rendering' mark). We copy them by clicking on the object and pressing the 'Shift' key. In order to prepare the simulations, we use two boxes. We lift the lines above the arranged boxes that will present obstacles for the descending lines. Then we add the boxes to the simulations by clicking on 'Create Rigid Body Collection' (Fig.14). We mark the lines and apply the 'Reactor Rope' modifier, and then include them into the simulations, adding them to the 'Rope Collection'. In the 'Rope Collection' modifier, we set the 'Num Weaves' value to 10, whilst defining the 'Advanced > Internal Steps' in the 'Rope Collection' also as 10 (Fig.15). Then we proceed to the 'Reactor'

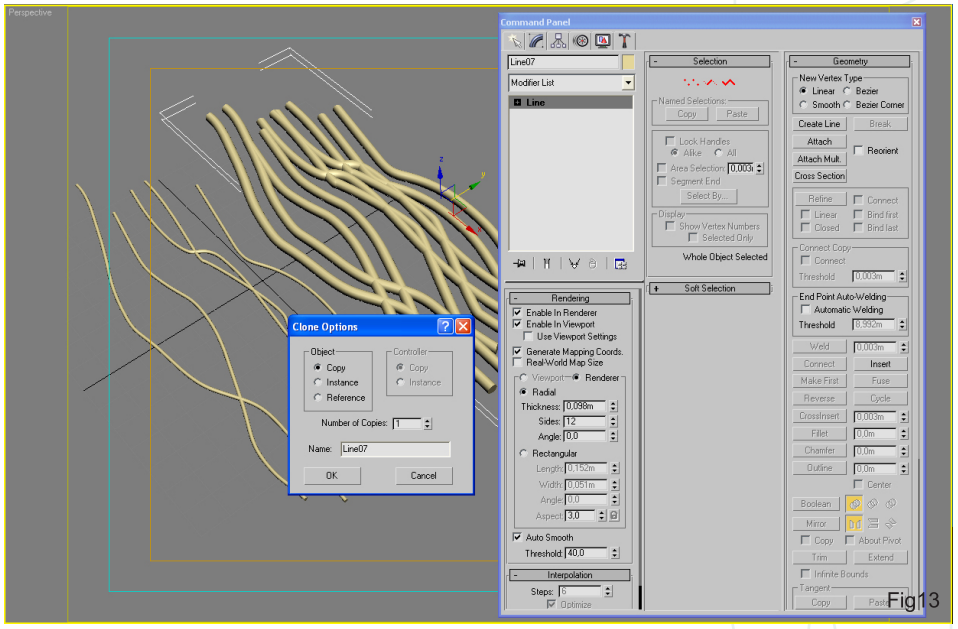


Fig13

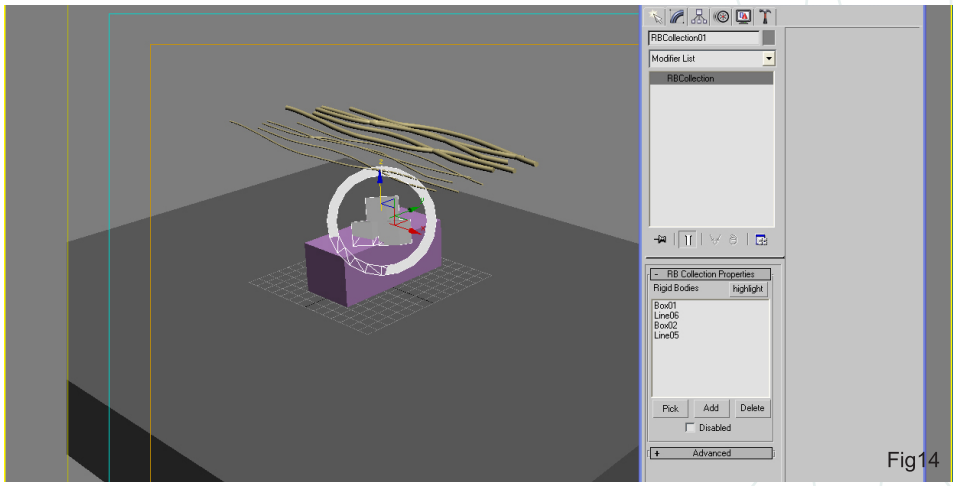


Fig14

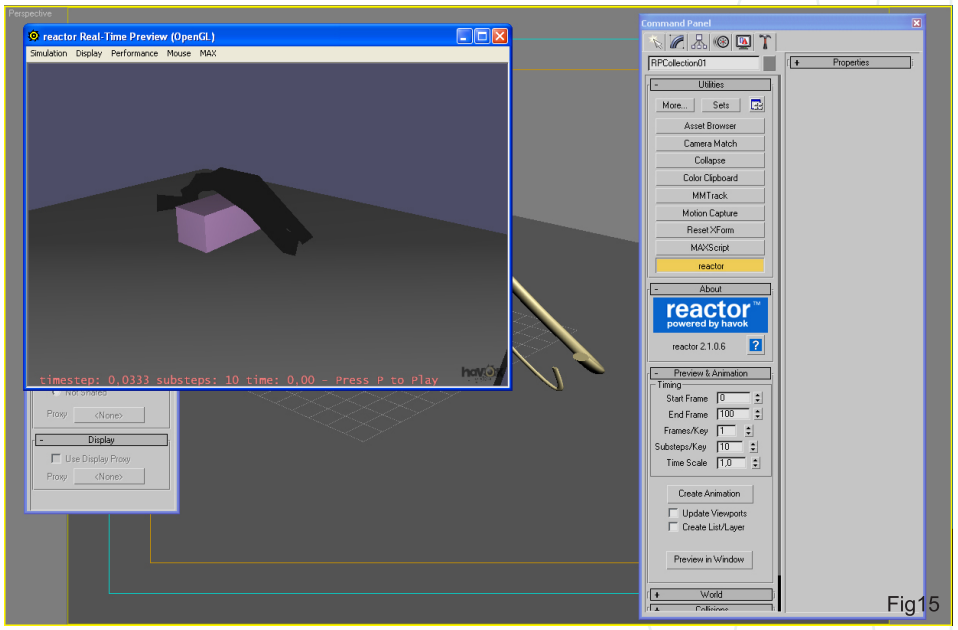
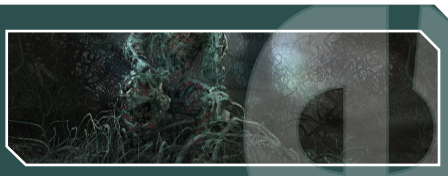


Fig15



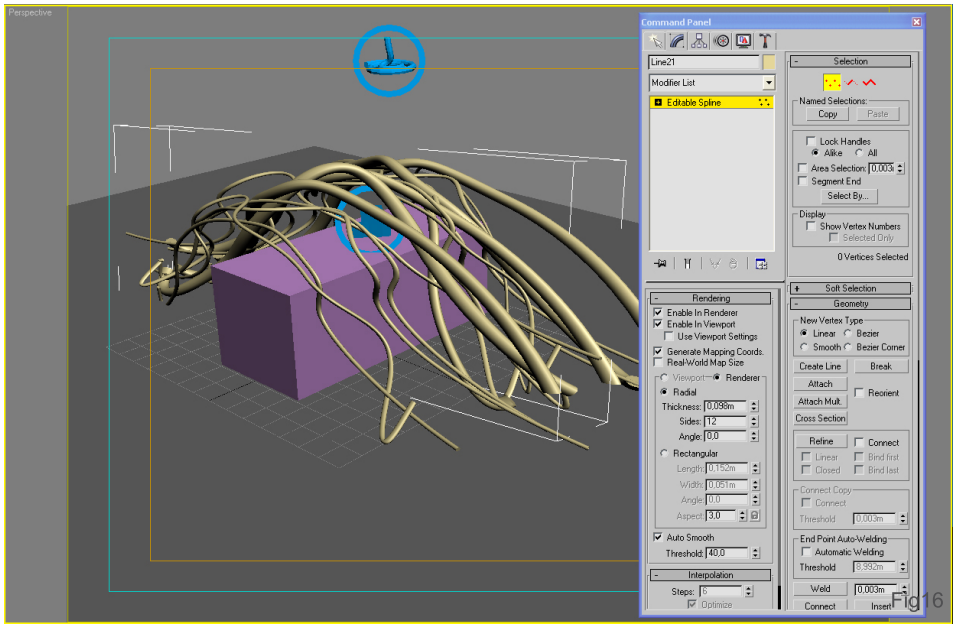
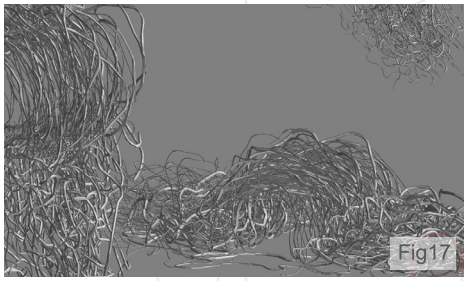
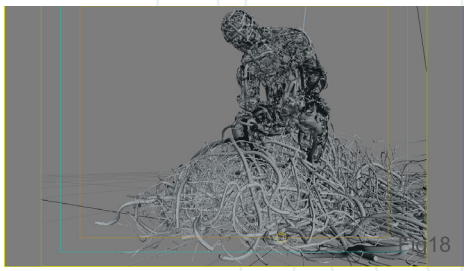
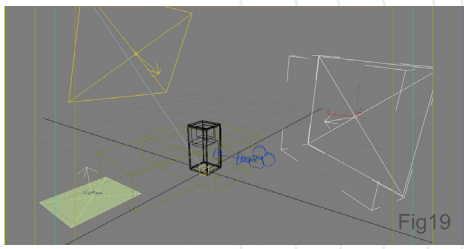


Fig16


Fig17


Fig18


Fig19

mark ('Command Panel>Utilities>Reactor'), and click on the 'Preview' button in 'Window'. Next we carry out the simulation, pressing the 'p' key, and update the viewport of Max. Now we mark the lines and convert them into 'Editable Spline'. At this point, we can perform manual corrections on the vertex level (Fig.16). The next step is to copy the lines. We have to do this score several times. We mark the newly made lines and convert them into 'Editable Poly'. Then we press 'resetXform' and 'collapse', taking the transformation matrixes to zero. They are now ready to be exported.

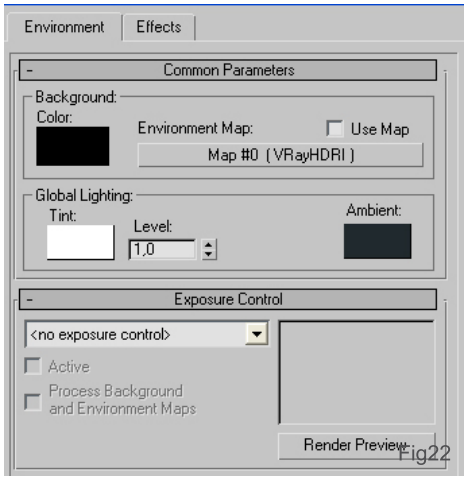


Fig22

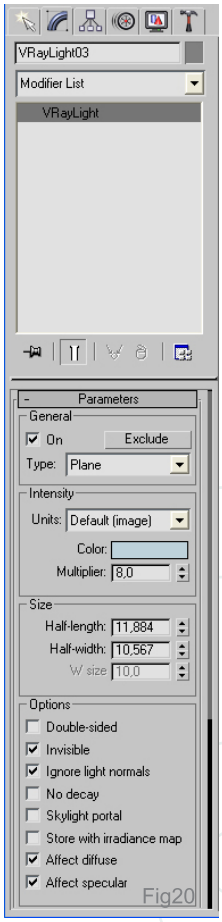


Fig20

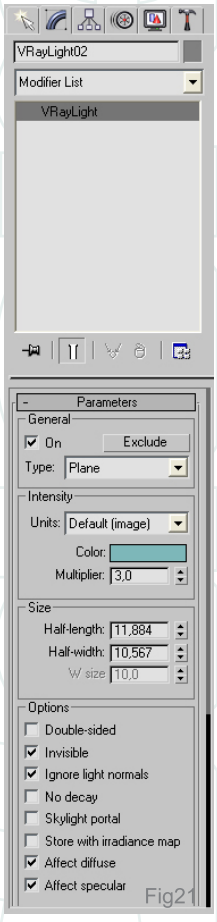


Fig21

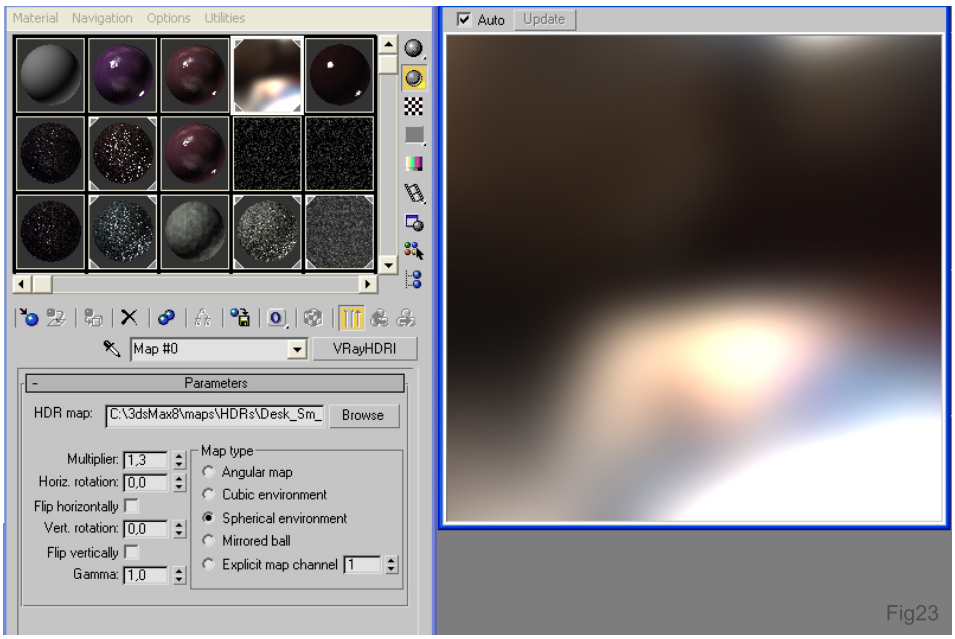


Fig23

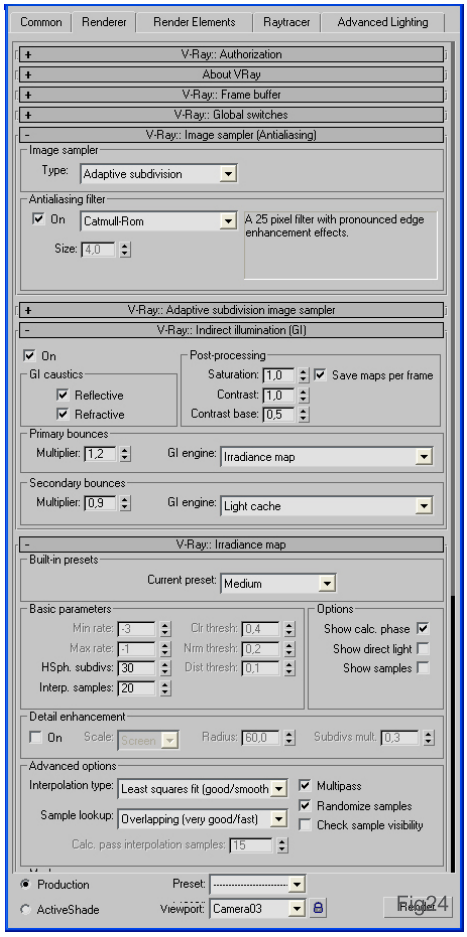


Fig24

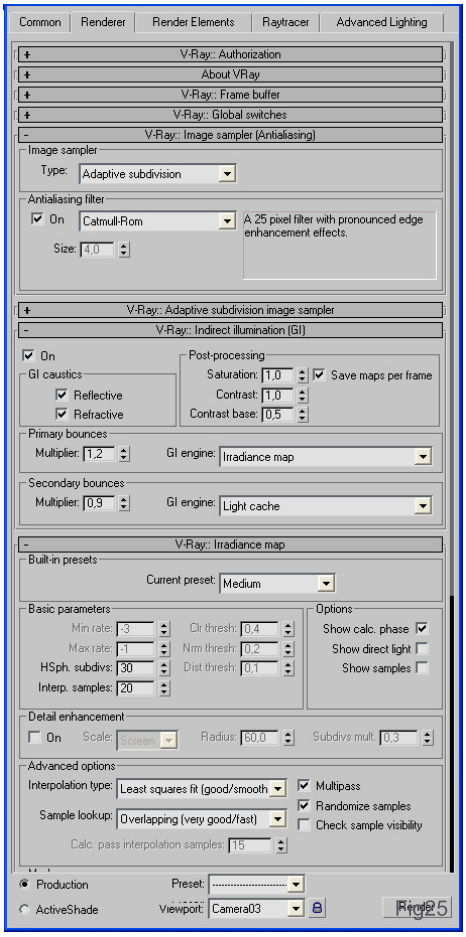


Fig25

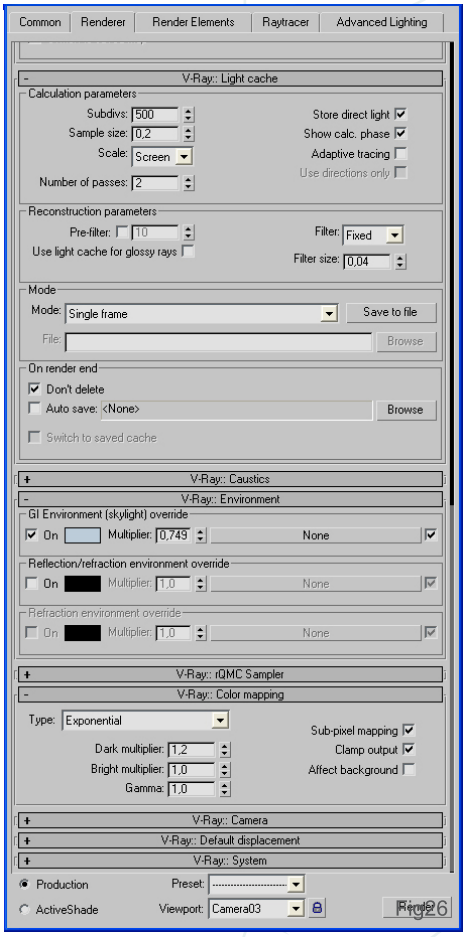


Fig26

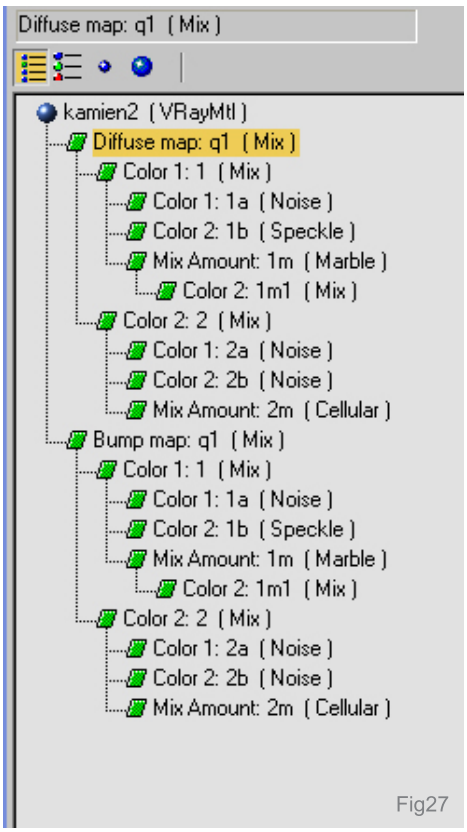


Fig27

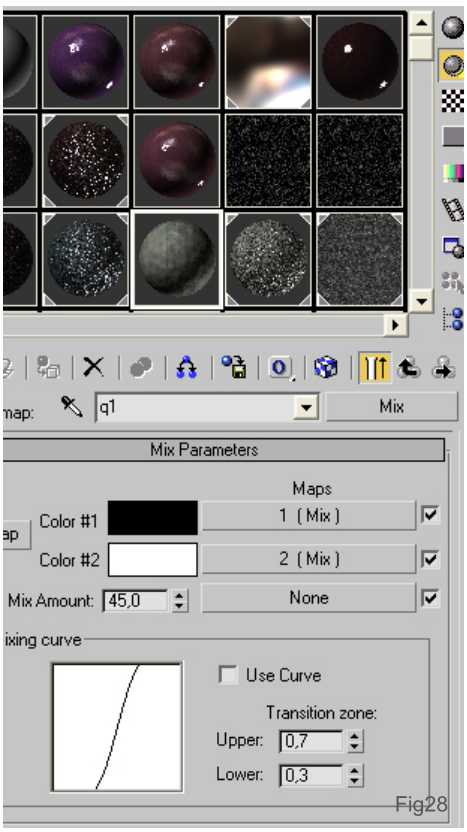


Fig28

Then we can proceed to Z-Brush. We import the lines and modify them as we like. Next we copy the object several times and arrange them into a tunnel (Fig.17).

SHADERS AND RENDERING SETTINGS (Fig.18)

I rendered all parts with the help of Vray (Fig.19-21), using two Vray lights and environmental 'gi', generated from the 'hdri' map (Fig.22&23). For light reflections, I used 'Irradiance map' for 'Primary Bounces', and 'Light cache' for 'Secondary Bounces' (Fig.24-26). The shader I applied is based primarily on mix maps, in which I used noise. It is important to create the noise type material for the displacement slot of the shader, as this material creates the impression of a rough surface. I used the shader settings, as seen in Fig.27&28.

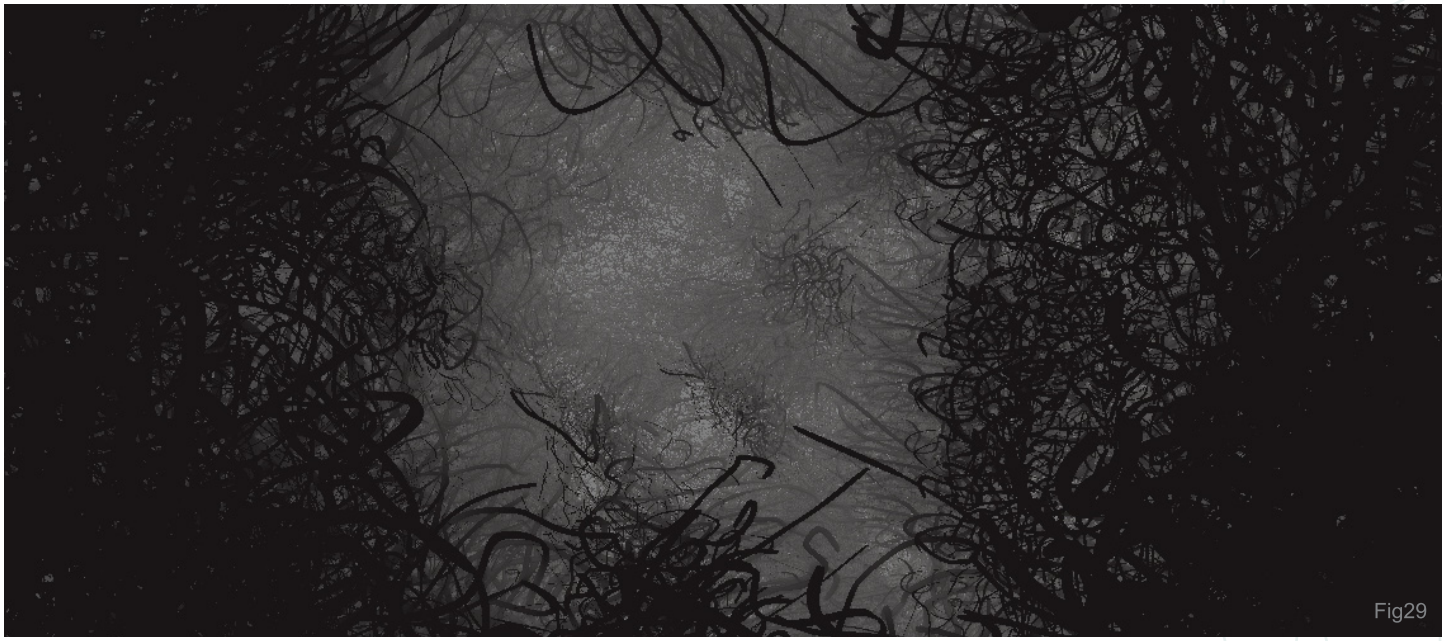


Fig29



Fig30

Background creation

In order to create the background, I used the Z-Brush renderings (Fig.29). It is important to generate the 'depth' picture in 'Zbrush', as it will allow us to create the fake depth of field. To achieve this, we copy our background onto a new layer and blur it, using 'lensblur'. To this new layer, we apply a mask that is our 'depth' picture. Now, the further you are from the figure, the more the picture is blurred.



Fig31


Fig32

Composing

The renderings were performed in separate parts (passes); I rendered the diffuse, shades, reflections, etc. - all separately. Then we can compose the renderings on various layers, in order to arrange them better; for example, we apply shades on the 'multiply' layer (Fig.30). Most of the renderings were strongly monochromatic, so I added some colour, applying layers of different blending modes such as 'colour overlay', 'colour dodge', and 'colour burn' (Fig.31). I composed the hole in Photoshop and After Effects. The last element added was the fog, as the icing on the cake (Fig.32). I applied it on the layer using the 'screen' blending mode. If you have any questions at all, I will be pleased to answer them.

Marcin Solarz

marcinek.cgsociety.org/gallery/

To contact this artist please e-mail him at:

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The Swordmaster

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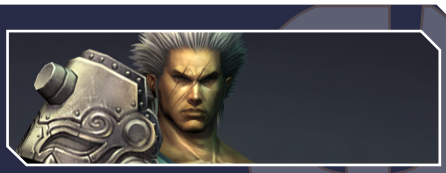
Issue 015 November 06

Texturing the Skin & Body

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Part 8
Texturing Armour and Clothing.

Introduction

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1. The clothing itself is by far the simplest to achieve as this will comprise of only two key layers of detail in the form of shadows and highlights, much like the skin previously. As such, we will start with the armour as this is a little more involved. We will begin with the elbow pad as this is a relatively small part of the armour but one that utilises most of the techniques we shall use on the more dominant pieces. First of all, select a neutral grey and block in the area on the template and then, using the elliptical marquee tool, select a small area within the curved section. Now, on the main menu bar, click on Layer – Layer Style – Bevel and Emboss. Alternatively, you can click on the small "f" icon at the base of the Layers palette. This will bring up a dialogue box similar to Fig.01. Here you can alter various settings that will determine the direction of light, along with the type and depth of bevel. You will notice that I have chosen an Emboss, and the angle of light is directly above in this case. This is because the orientation of the detail on the texture map is such that the top of the ellipse will be facing upwards on the character and hence the shadow will be underneath. Experiment with the slider bars and styles and observe the effects.

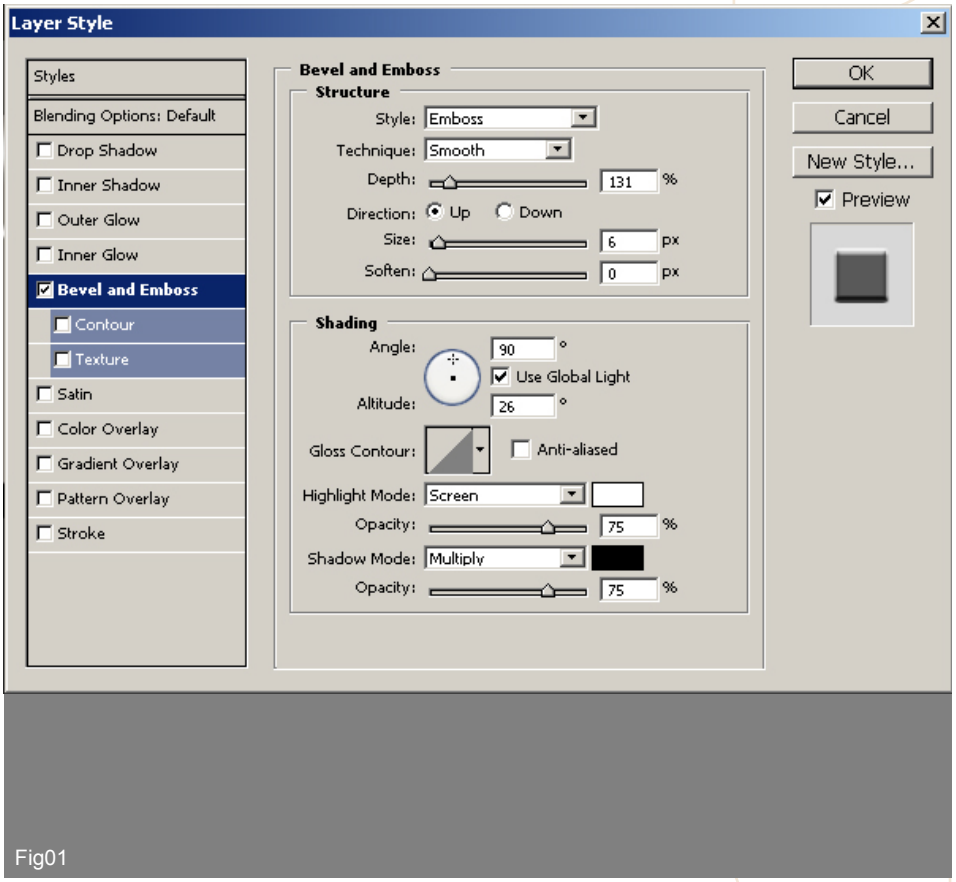


Fig01

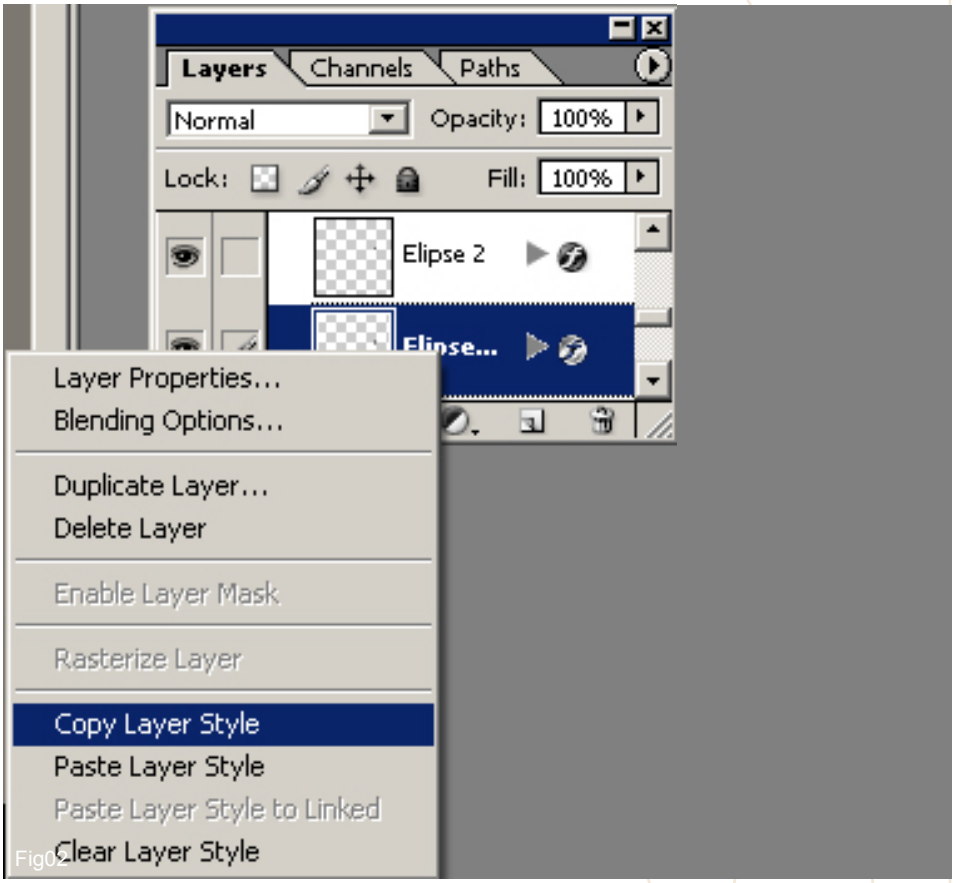


Fig02

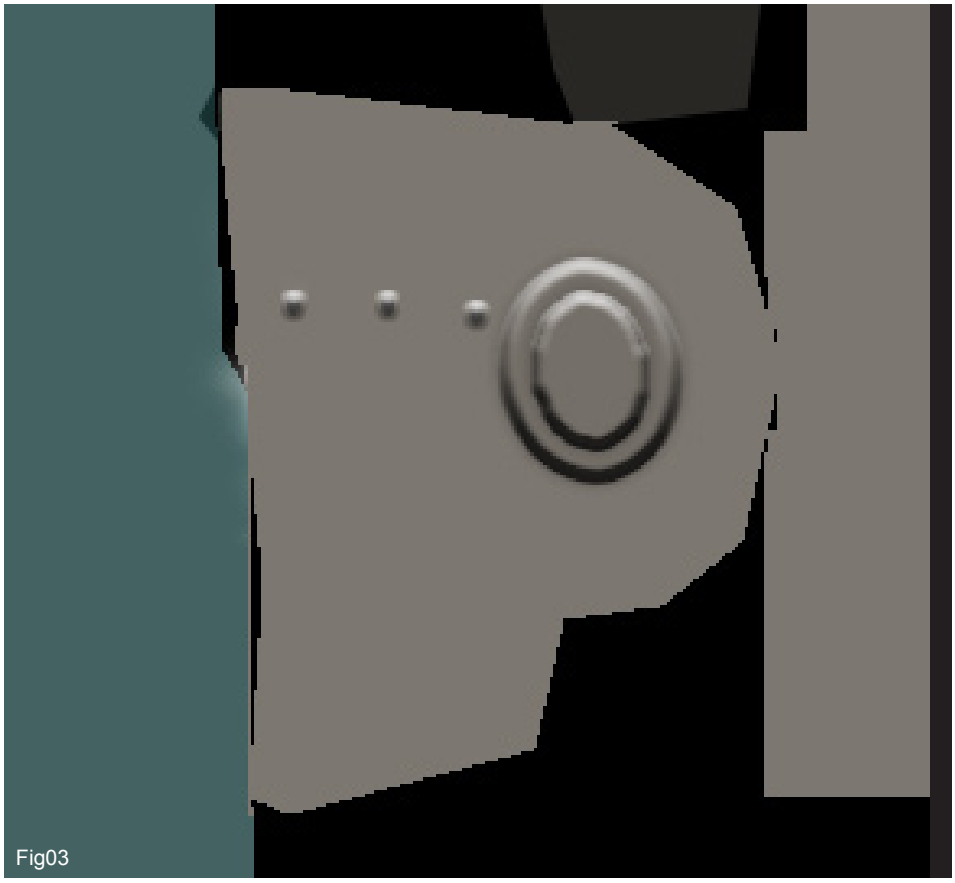


Fig03

2. One more thing which will help is to add a subtle Drop Shadow, which you can find at the top of the list. Check the tick box and then slide the Distance arrow down to zero and increase the Size and Spread until there is a soft shadow around the ellipse. Now, on a new layer, create a smaller ellipse inside this one and fill it with the same grey colour. Right-click on the ellipse 1 layer and select 'Copy Layer Style' and then paste this into the new layer, as shown in Fig.02. You will now have two ellipses that both incorporate an emboss and drop shadow.

3. On another new layer add in some rivet heads using the same technique, but perhaps leaving out the drop shadow (Fig.03).

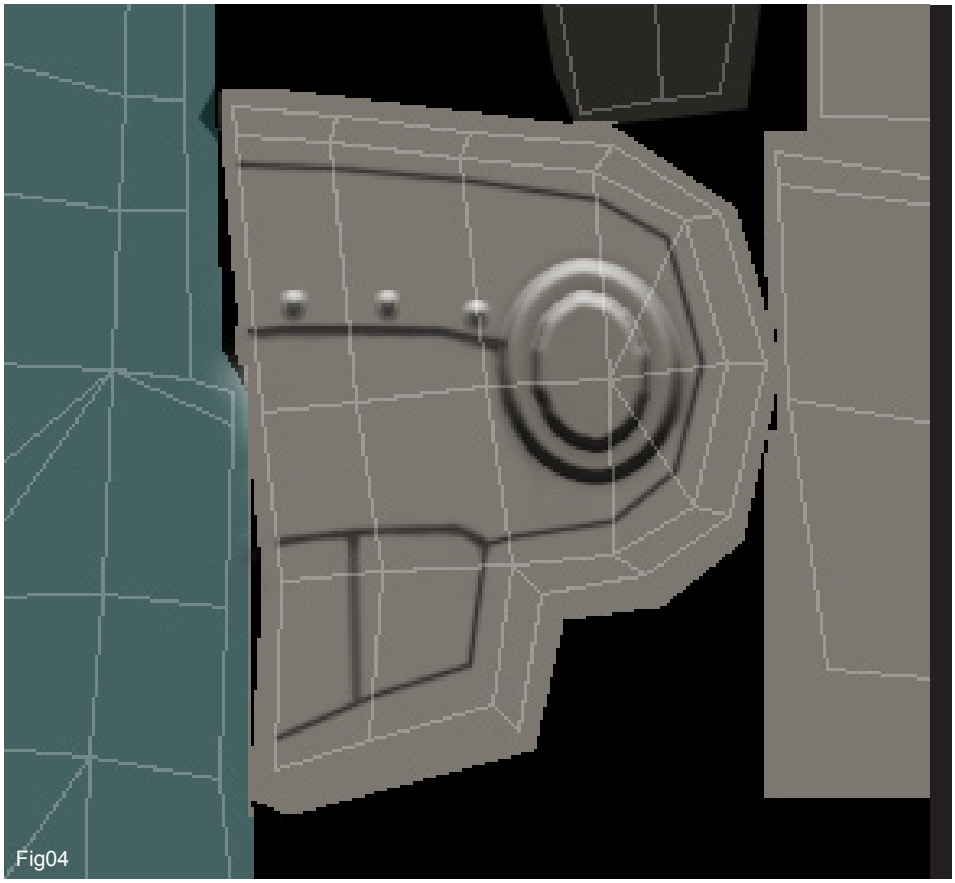
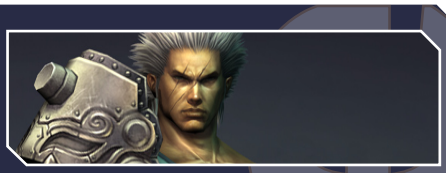


Fig04

4. Now add one more layer and start to draw in some outlines that will trace the shape of the elbow pad and create some extra detail, as seen in Fig.04.



5. Now, believe it or not, that is essentially the structure of our elbow pad. It doesn't look finished yet, but with a few minor tweaks it will be. As this is a relatively small area on the template, we are going to apply our final adjustments on the main colour block layer, as opposed to adding any further layers. You can either use the Colour Dodge / Burn tools or choose lighter and darker shades of grey to do this - both methods will require some painting by hand. We are aiming for something similar to Fig.05, in which you can see some modulation to help emphasize the grooves and curvature of the metal. Already we can see an improvement, but one final layer will create the finishing touch.

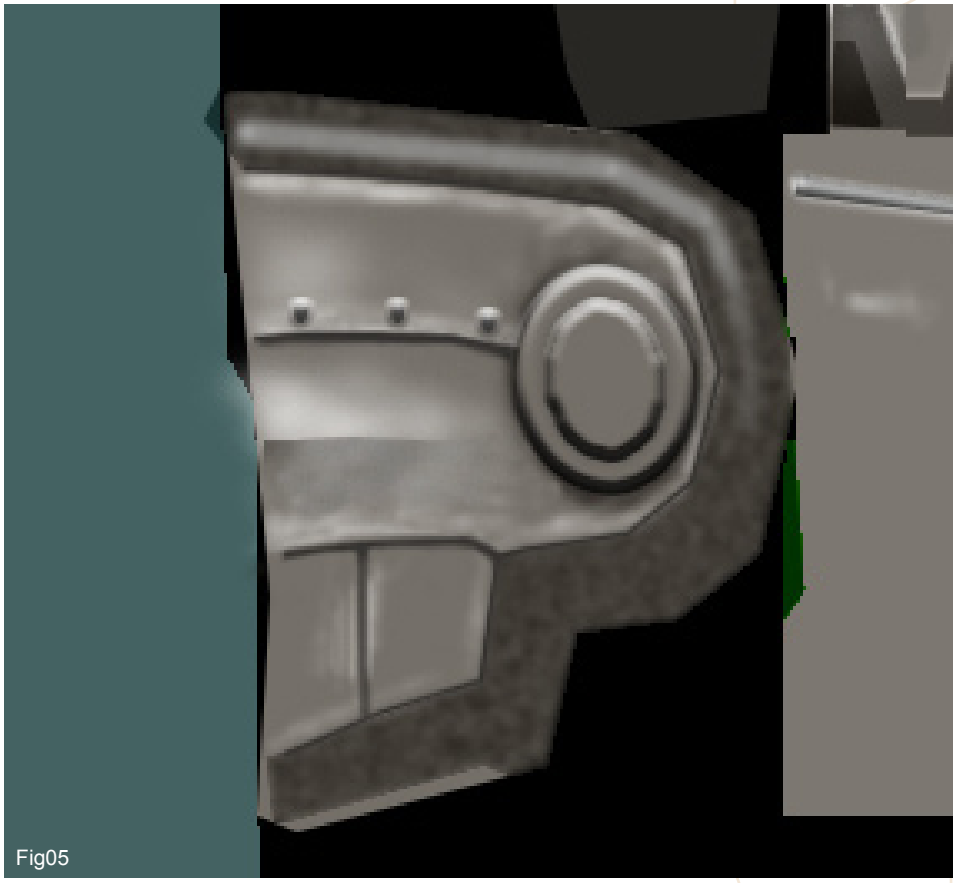


Fig05

6. This will be a metal overlay which shall eventually be used on all of the armour and so must be near the top of our layer stack. Choose any photo of metal that demonstrates the right kind of scale and then set it to 'multiply' and lay it over the top, making any colour / tonal adjustments as required (Fig.06). This then describes the general process we will apply to all of the armour sections, no matter how complex. Use the marquee / selection tools to add shapes followed by Layer Effects to add in detail and lighting. Then, either on a new layer or on the base colour, paint in the refinements, such as shading and highlighted edges etc. You can then clone parts of the metal overlay onto the designated area to complete the armour. Remember to use a guidelines layer initially, as we did with the skin section, to check the integrity of your mapping – no point in spending half an hour painting an area of detail only to find it is not correct on the model!

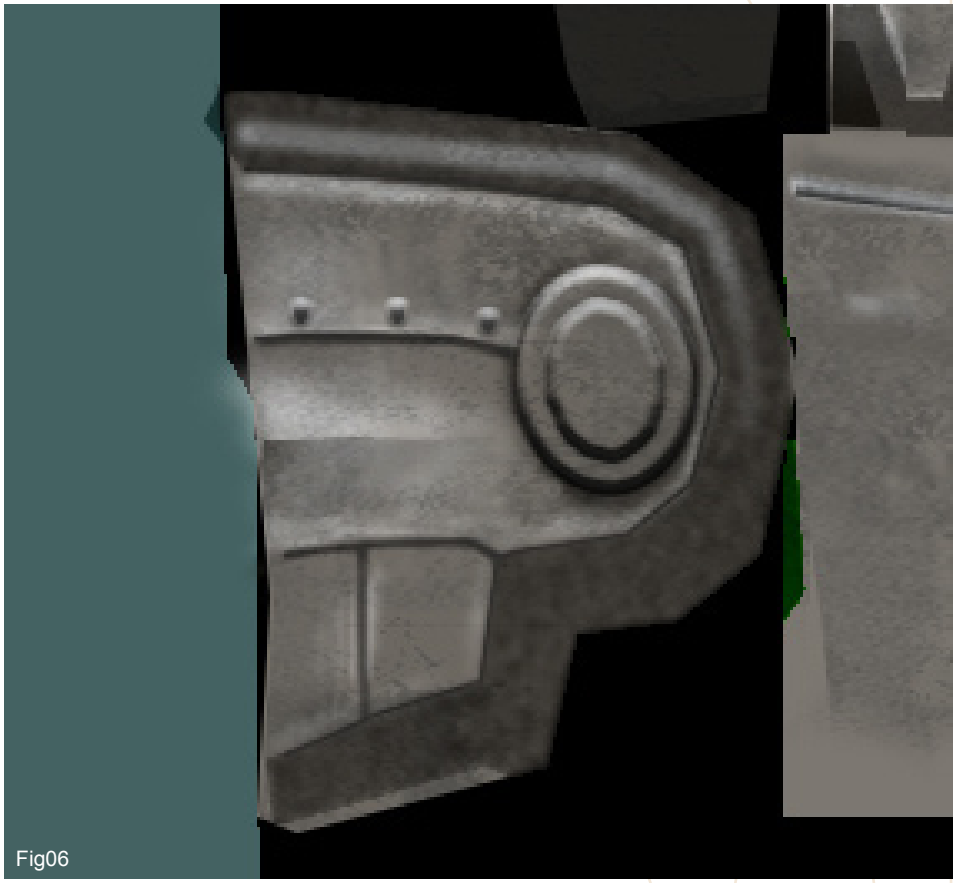


Fig06

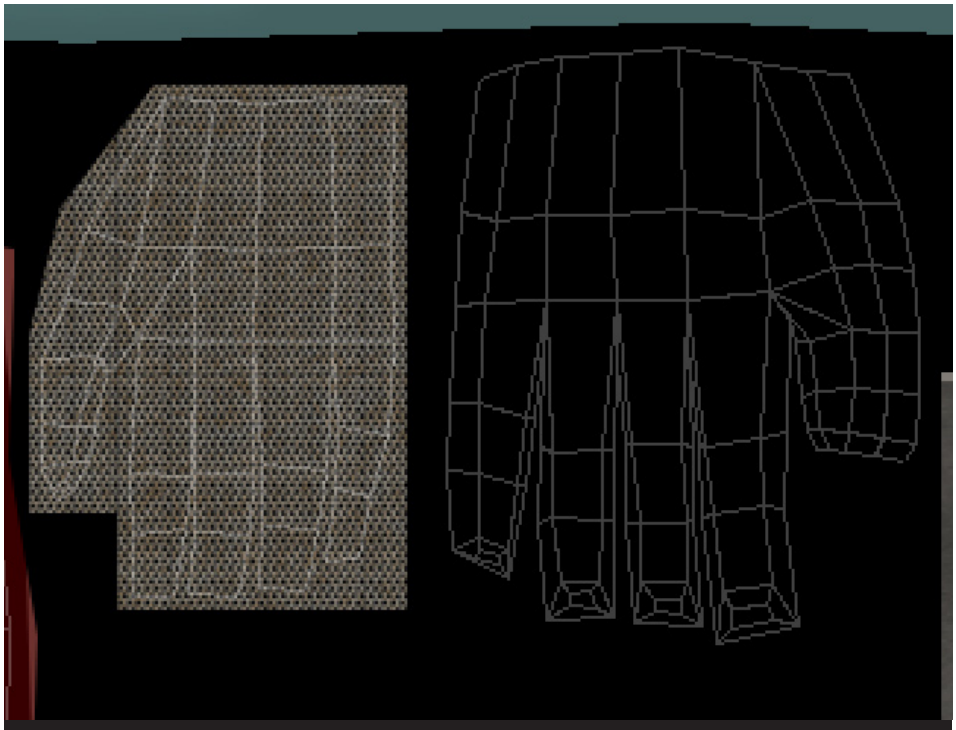


Fig07

7. Now on to the hand - a fairly small but highly detailed area. The first step is to find a suitable image of chainmail which can then be copied into our template and scaled to a sufficient size, as seen in Fig.07, to form the palm.

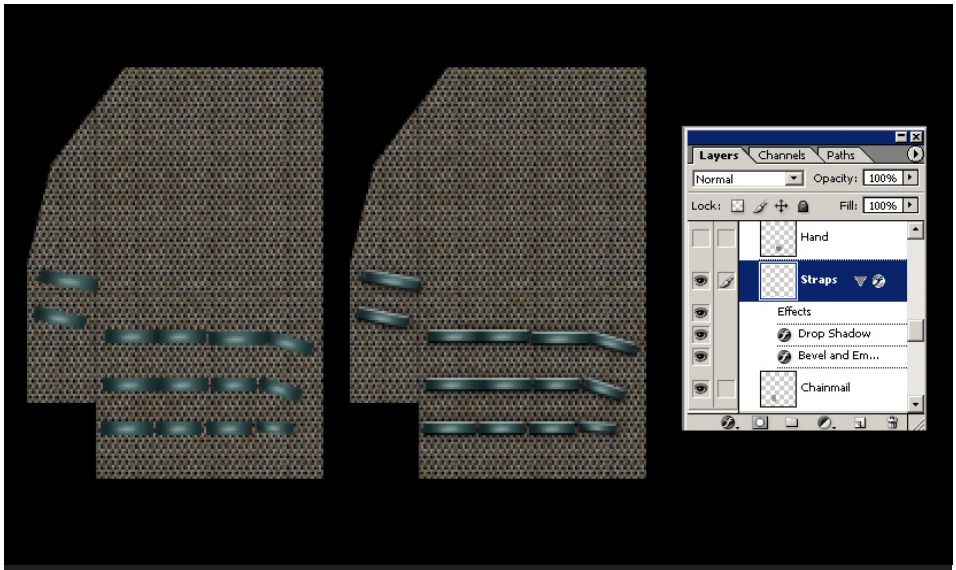
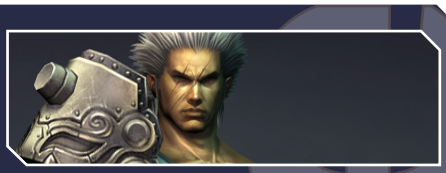


Fig08

8. Now add a series of straps across the fingers with a slight shadow at the edges and a small highlight in the centre, as seen on the left in Fig.08. The next step is to add two layer effects, seen on the right in the layers palette, which will help define them further.



9. The top of the hand, which shall be armour plated, will be a little more intricate. First of all, use the guidelines layer as a gauge by drawing in the outlines of the metal plates, as seen in Fig.09.

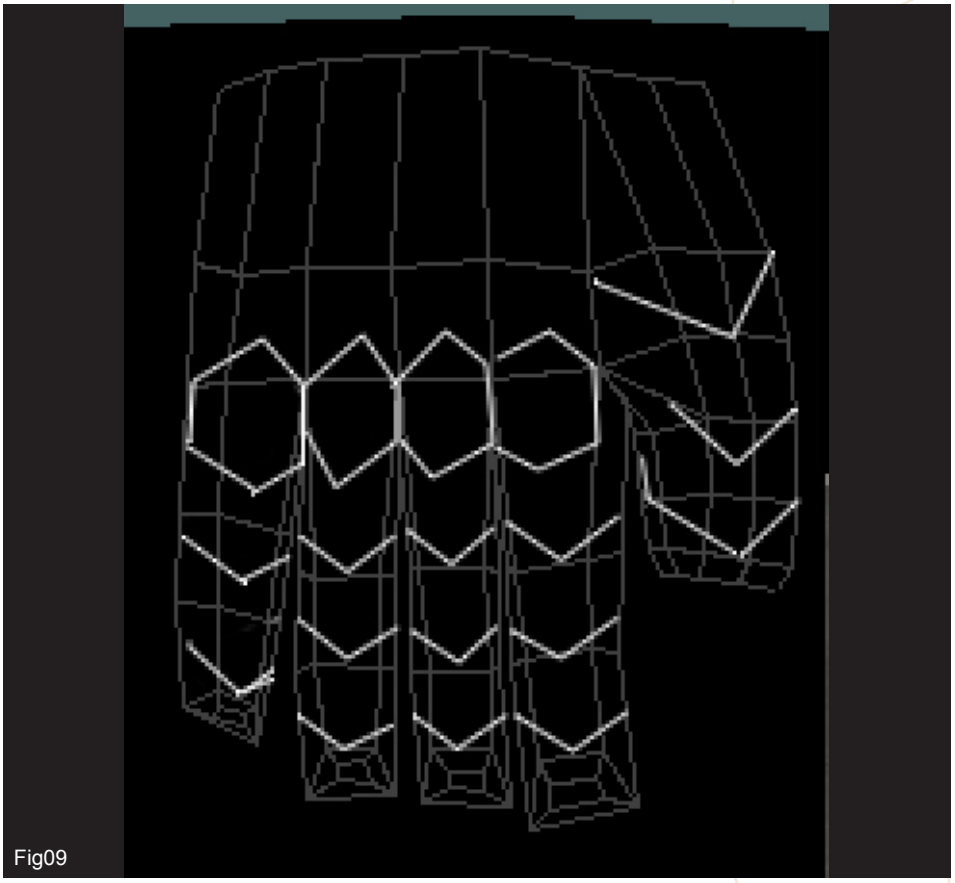


Fig09

10. Now make separate selection groups around the guidelines so you end up with a series of shapes, as seen in Fig.10. Afterwards, you can fill in with a flat grey colour, consistent with the rest of the texture, and when you apply the layer effects they will occur on each piece.

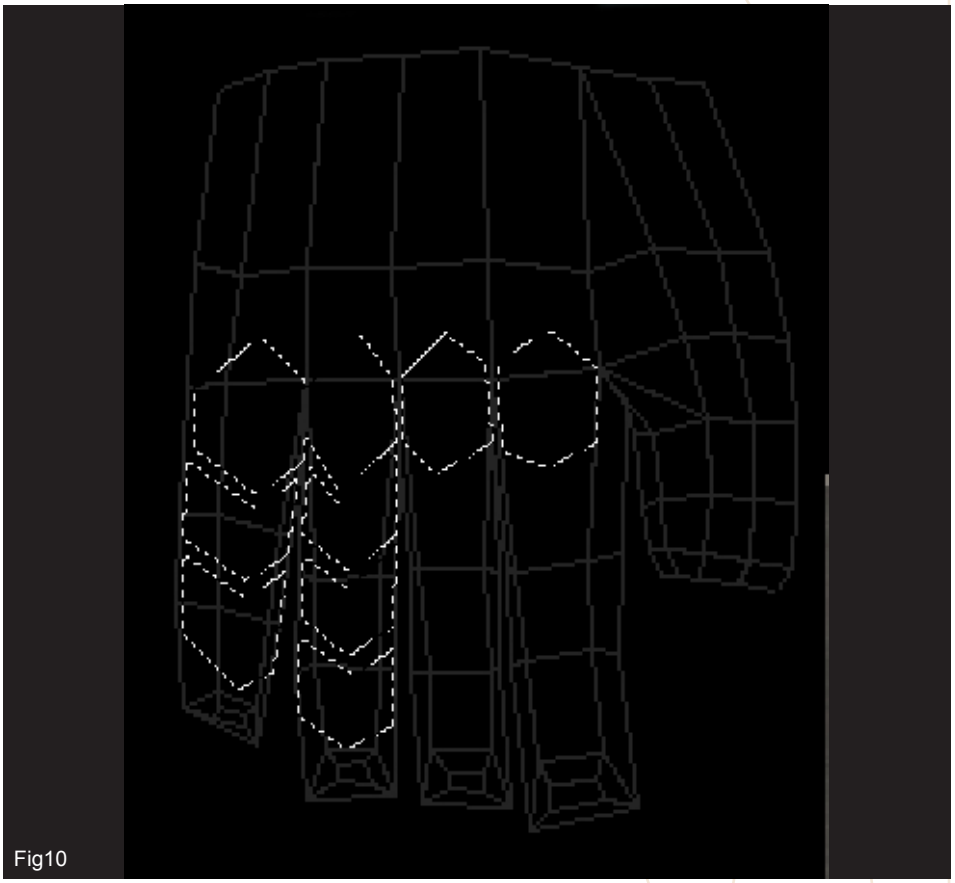


Fig10

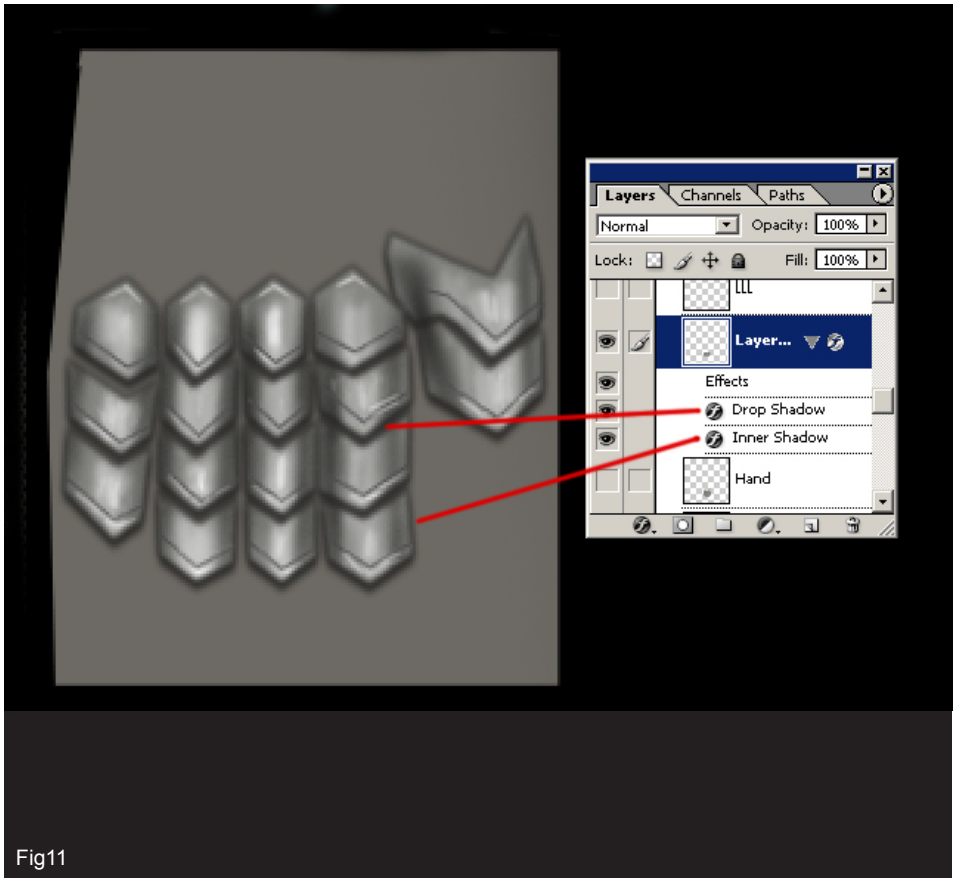


Fig11

11. In Fig.11, you can see the effects of the two layer styles that have been applied; the inner shadow which provides a dark outline and the drop shadow which is below each piece.

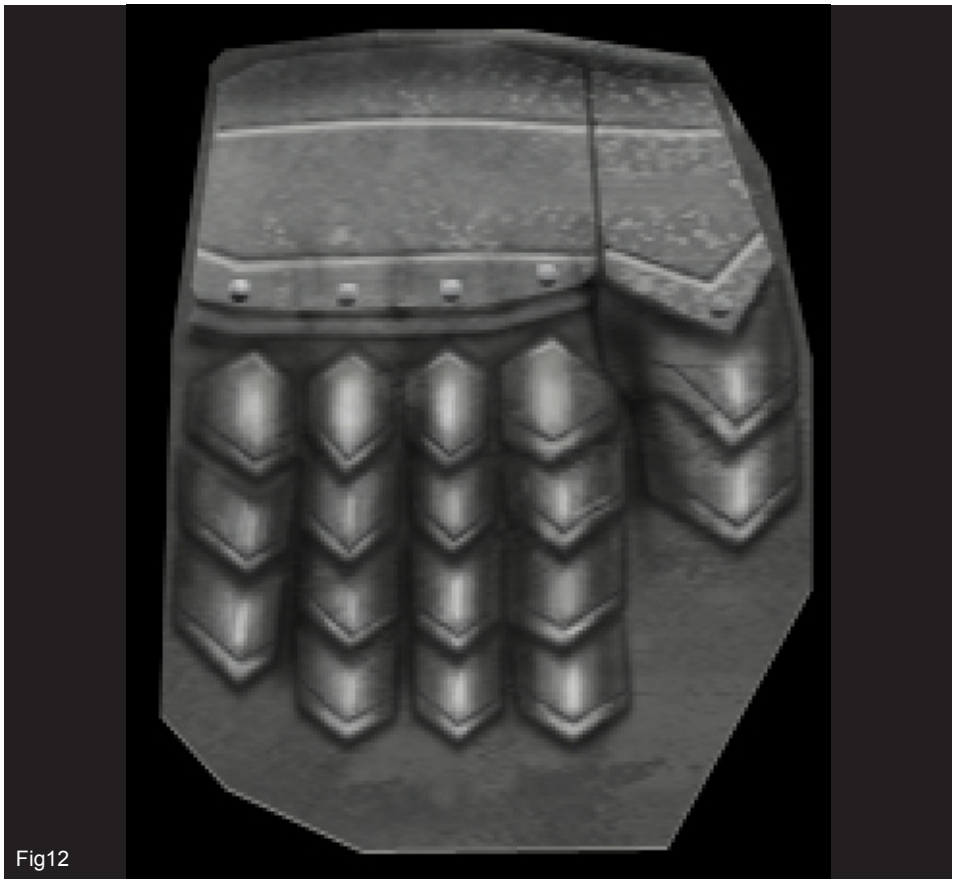
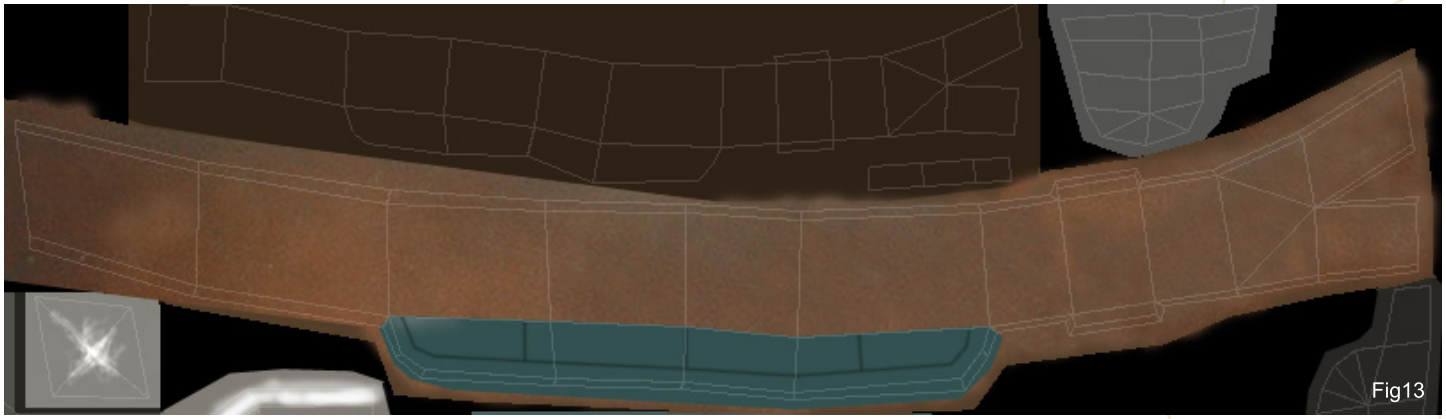


Fig12

12. Now when we overlay some more of our metal texture and some finishing touches, we end up with something like Fig.12. You can see here that I have added some shadows between each finger, together with some highlights across the tops. I have also created some rivets, as before, and painted in some lines to further embellish the hand. When tackling the rest of the armour, follow these procedures and be mindful of the fact that you want there to be an ambient light source above the character.


Fig13

13. Now for something that features quite heavily on our template – the belts. There are three altogether and all are made in a similar fashion. Block in the base colour and then find a suitable photograph of some leather and paste it over the top in a new layer. Set the blending mode to 'multiply' and alter the hue, brightness and saturation accordingly. This will give you a good starting point, similar to Fig.13.

14. We can now position the rivets, which we do on a new layer, by using the circular marquee tool set to a fixed aspect ratio, as seen along the menu bar in Fig.14. The way to paint these is to first fill in a circle with a grey colour. Then go to Select - Modify - Contract and choose about 3 pixels, dependant on the size of the circle of course. Then delete the inner portion until you are left with a simple ring. All you need to do now is to apply a Bevel and Emboss effect and "voila"! Now simply Ctrl + Alt drag two more to finish.



Fig14

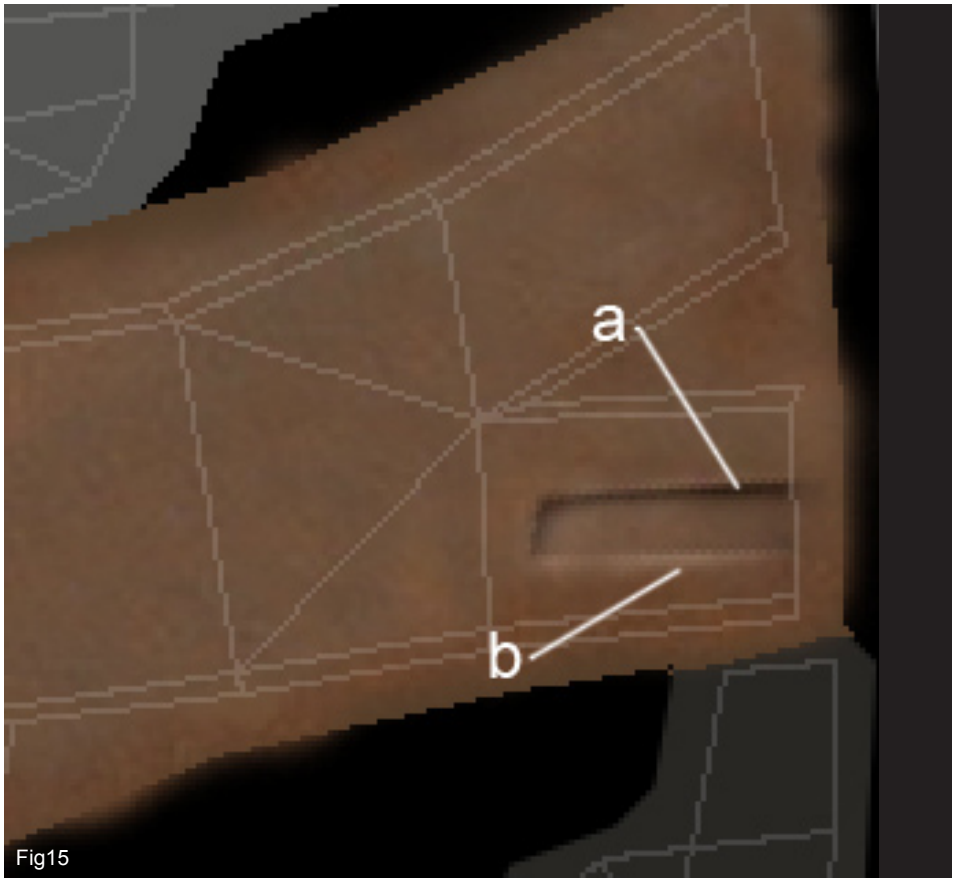
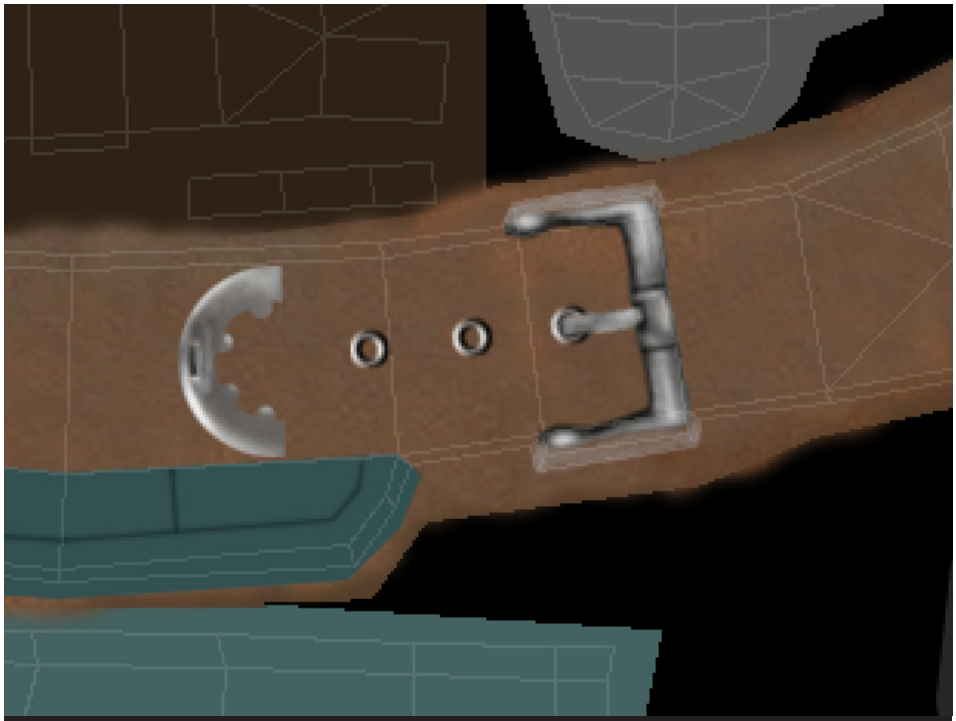
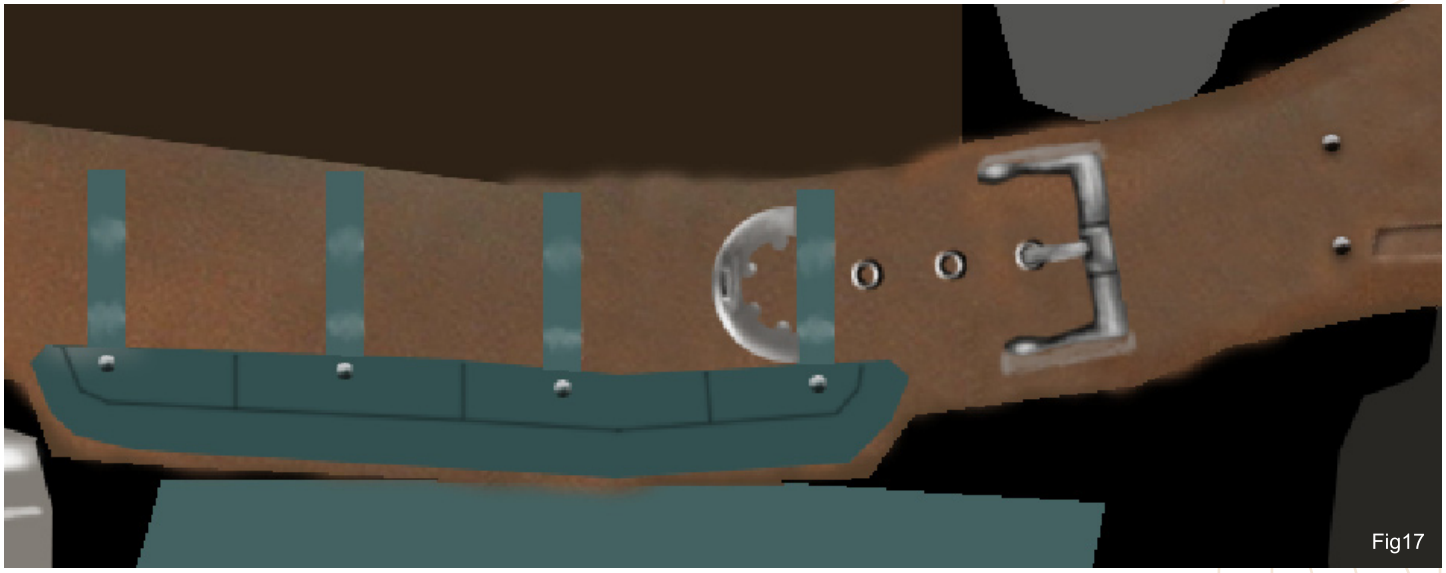


Fig15

15. Next we will add two indentations where the belt forms two straps. You can do this on the main colour layer as it is relatively simple. Make a rectangular selection and paint in a dark band under the top edge (a) as shown in Fig.15. Now invert the selection (shift + Ctrl + I) and lighten the lower edge to form a highlight (b). Now do the same on the upper strap to finish off.


Fig16

16. The two other details that are still missing are the buckles. Again these will be done on separate layers in order that changes can be made quickly. In Fig.16, you can see two buckles that have been painted in. To create the left one make a circular selection and fill in with a grey colour. Now contract this selection group and hit delete, leaving a ring, as we did with the rivets. Now delete half of the remaining shape and use the circular selection once again to add the small semi-circles around the inner-edge. Now just use a brush to add in the highlights and shadows manually. These elements are best done by hand in the end and so there are no clever tricks to speak of, just an awareness of where you want the light source.


Fig17

17. The next stage involves adding in rivets and a few vertical straps, as shown in Fig.17. You can see that I have also painted in highlights across the middle of the straps.

18. To complete the belt we now need to add in the shadows and highlights, which can be done using two new layers, as with the skin in last month's instalment. In Fig.18, you can see that I have placed some general shading around the centre of the belt, as this area falls under the arm, and also made sure there is a shadow around the buckles which helps fix them to the leather and avoid the appearance that they may be "floating", as it were. Again, I have added some thin stitched lines along the length, which can be traced by a highlight.


Fig18

Fig19

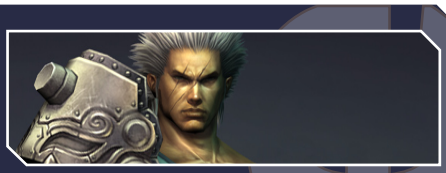




Fig20

19. In Fig.19, you can see the final version with the highlights concentrated at either end, particularly on the right where the belt is folded. The three edges surrounding the triangular hole would catch the light and so show the brightest highlights. You can follow the same procedure for the remaining two belts, not forgetting to overlay the leather reference for each.

20. So far, we have dealt with techniques used to paint the metal armour and leather belts, but one area yet to be covered is that of cloth. This will feature on the trousers, as well as the banner hanging from his waist. The first step is - yes, you guessed it – block in the base colour, as seen in Fig.20, along with two seam lines.



21. Now using a shadows layer set to 'Multiply', start painting in the direction of some of the folds, using the same colour as the trousers. Using a standard soft round airbrush they will naturally come out darker, due to the layer blending mode. Use a larger brush to begin with, to get a soft edge, and then reduce the size of the brush to sharpen crease lines. In Fig.21, you can see the arrows which dictate the direction of the creasing. Try and vary it slightly as there is always variety where folds are concerned.



Fig21

22. Now on the highlights layer (Set to Soft Light), simply trace around the shadows to emphasize them, as well as placing a few strokes in between, as shown by the arrows in Fig.22. Bear in mind which areas will receive more direct light (in this case the outside of the leg), and focus the stronger highlights in this area. Use a colour that is almost white, but with a shade of the green, in the trousers, which will help. Use a small, soft brush to add crisp edges to some of the more extreme creasing down the outside of the leg. Generally, creases appear more around areas of tension, such as joints - hence the detail around the groin, so keep this in mind.



Fig22

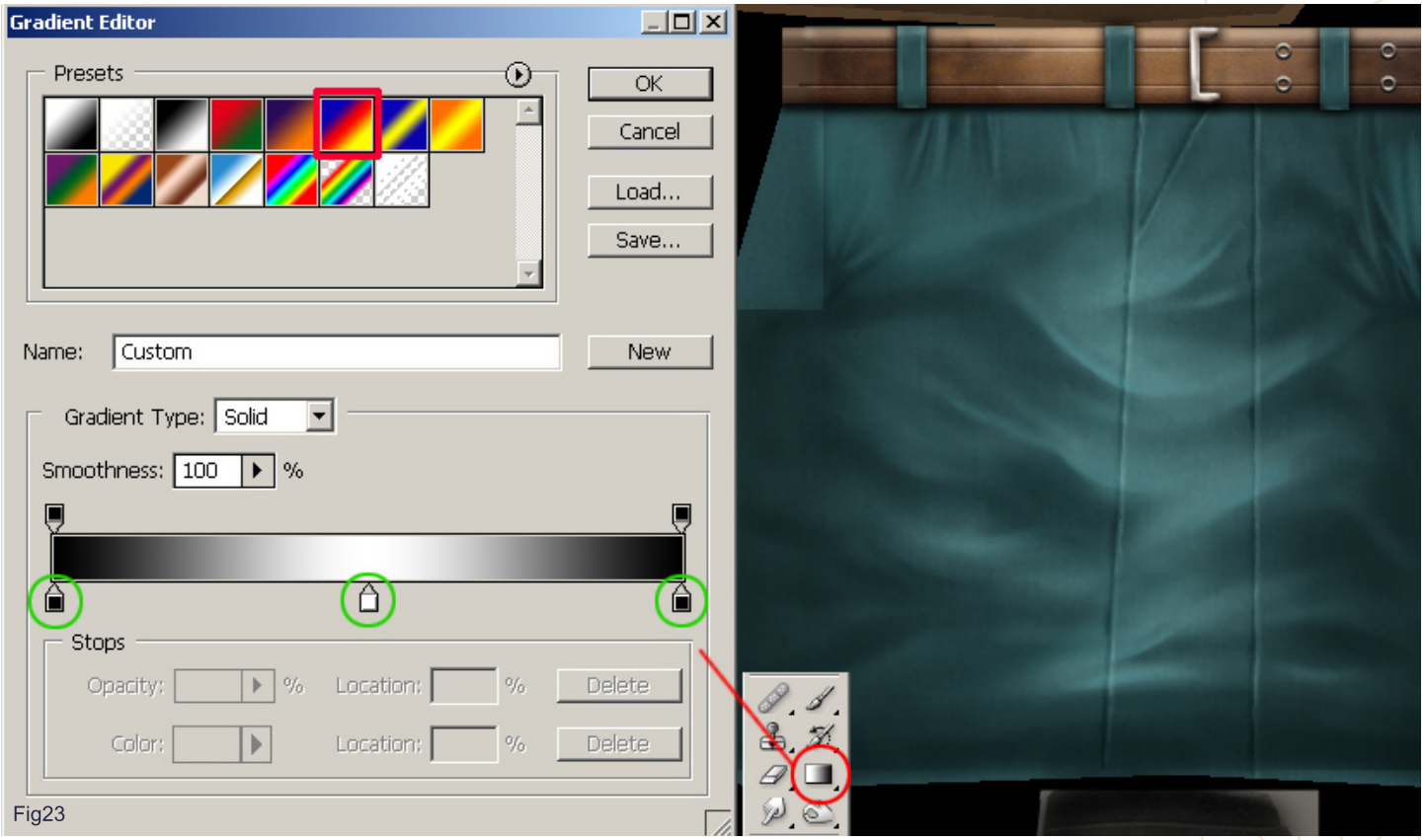


Fig23



23. One final layer, to help provide some subtle shading, can be added on top of the previous three. This will incorporate a Gradient, which can be found on the toolbar (seen ringed in red in Fig.23). First of all, create a selection area around the wireframe containing the trousers, and then click on the gradient tool. This will open up a dialogue box, similar to that on the left. Now select the preset in red along the top of the editor, and proceed to click on the three tabs under the gradient bar, ringed in green. Change the colours to black, white and black, as shown, and then drag a line from the left of the trousers to the right, making sure that the layer mode is set to Multiply. You should now see a consistent shadow down the edges of the trousers fading away in the middle, as seen on the right. A similar approach can be used on the waist banner, except that is for the gradient. Begin with some broadly painted shadows using a Soft Round airbrush, and then tighten the creases with a smaller Hard Round brush before emphasizing them with a highlights layer.

Conclusion

Once you are satisfied that you have completed each of the components on the texture, you can add a couple of finishing touches if you wish. These incorporate painting in some shadows around the clothing and armour, particularly under the shoulder piece and elbow guard. This will just emphasize the geometry and add a richer and deeper contrast to the shadows when the character is placed in a scene. You will notice that the trousers have not been unwrapped in their entirety and so it will not be possible to place a shadow under the waist belt and banner, as it would be mirrored on both sides. Ideally you should unwrap both legs in order to solve this problem, but for the sake of saving time I have neglected to do this. One remaining aspect you can add is some wear and tear to the clothing and armour, through dirt maps. Finding a suitable image of rusted metal will provide a good base from which to extract some detail which can be colour adjusted and then overlayed.

You could use a Multiply mode to add dirt/rust, or perhaps Soft Light/Screen to add scratches. Have a go and see what you can come up with. You could also try using Layer Effects – Bevel / Emboss to add dents and create a battle, hardened look. This, I hope, covers most of the crucial aspects of the texturing phase of the tutorial. You may find that some of the texture is stretched slightly when applied to the model, as is often the case. An alternative to changing the texture itself is to tweak the mapping within Max to solve the issues, which is usually far quicker. Simply apply an Unwrap UVW and transform the verts, as outlined in the mapping tutorial. When the texture is applied to the mesh, and rendered in a simple scene, we end up with something similar to this image.



Tutorial By

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The Swordmaster

Is our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3D applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications. Over the next 8 months we will outline, in detail, the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

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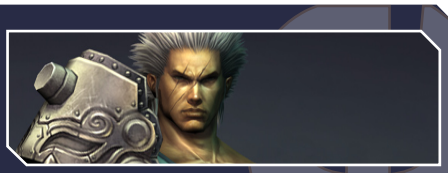
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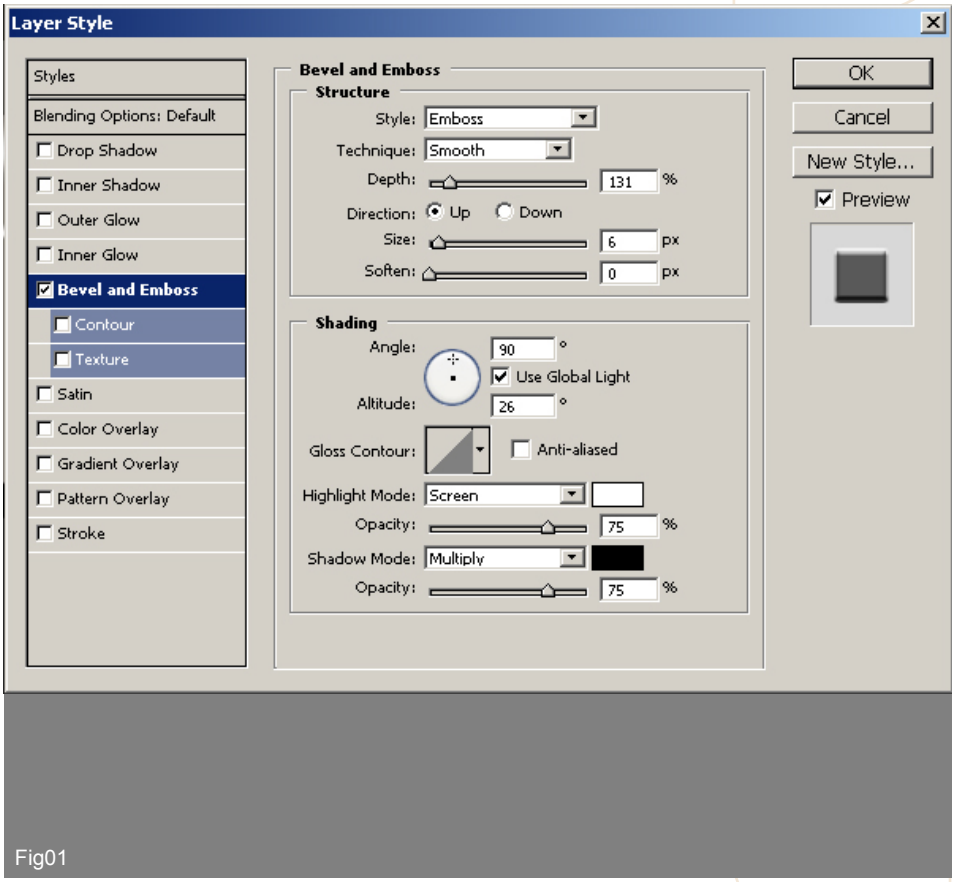


Fig01

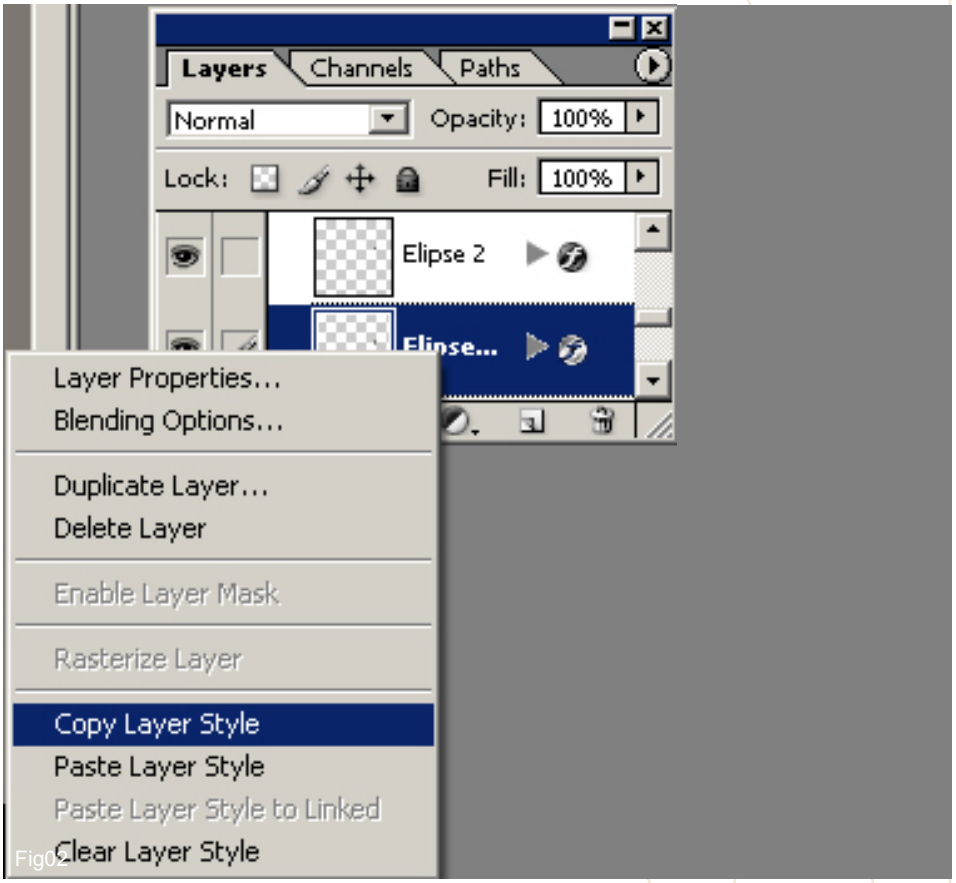


Fig02

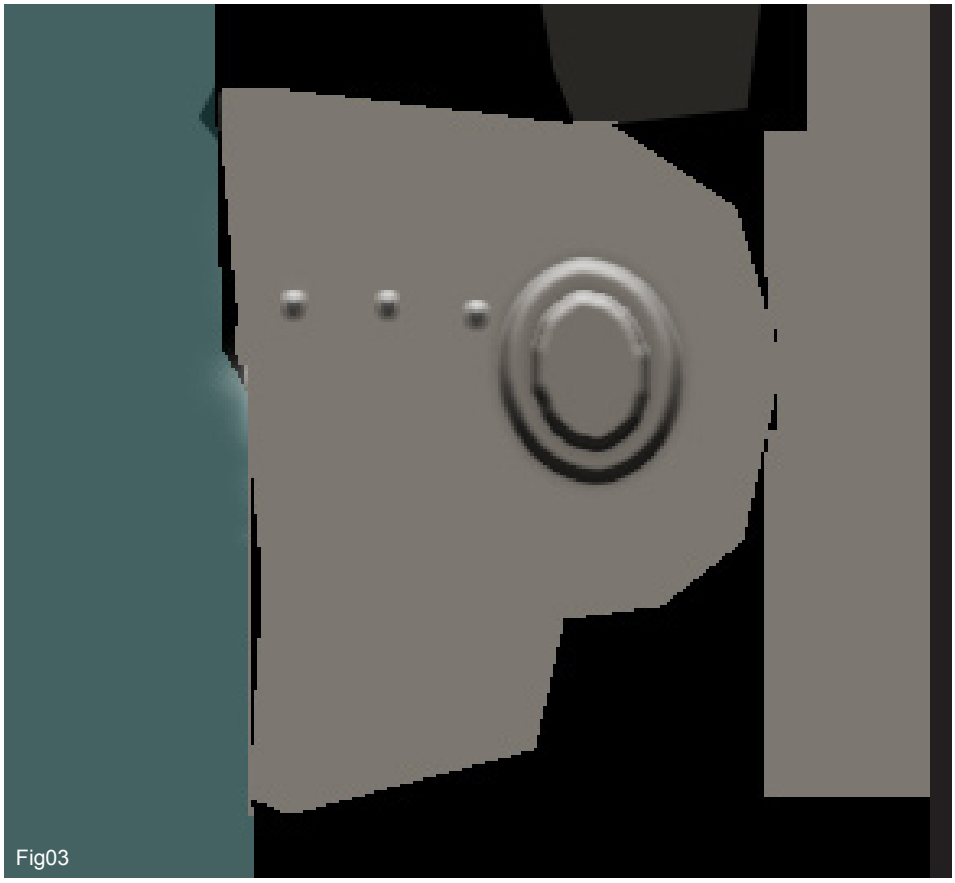


Fig03

2. One more thing which will help is to add a subtle Drop Shadow, which you can find at the top of the list. Check the tickbox and then slide the Distance arrow down to zero and increase the Size and Spread until there is a soft shadow around the ellipse. Now, on a new layer, create a smaller ellipse inside this one and fill it with the same grey colour. Right-click on the ellipse 1 layer and select Copy Layer Style and then paste this into the new layer, as shown in Fig.02. You will now have two ellipses that both incorporate an emboss and drop shadow.

3. On another new layer, add in some rivet heads using the same technique but perhaps leaving out the drop shadow (Fig.03).

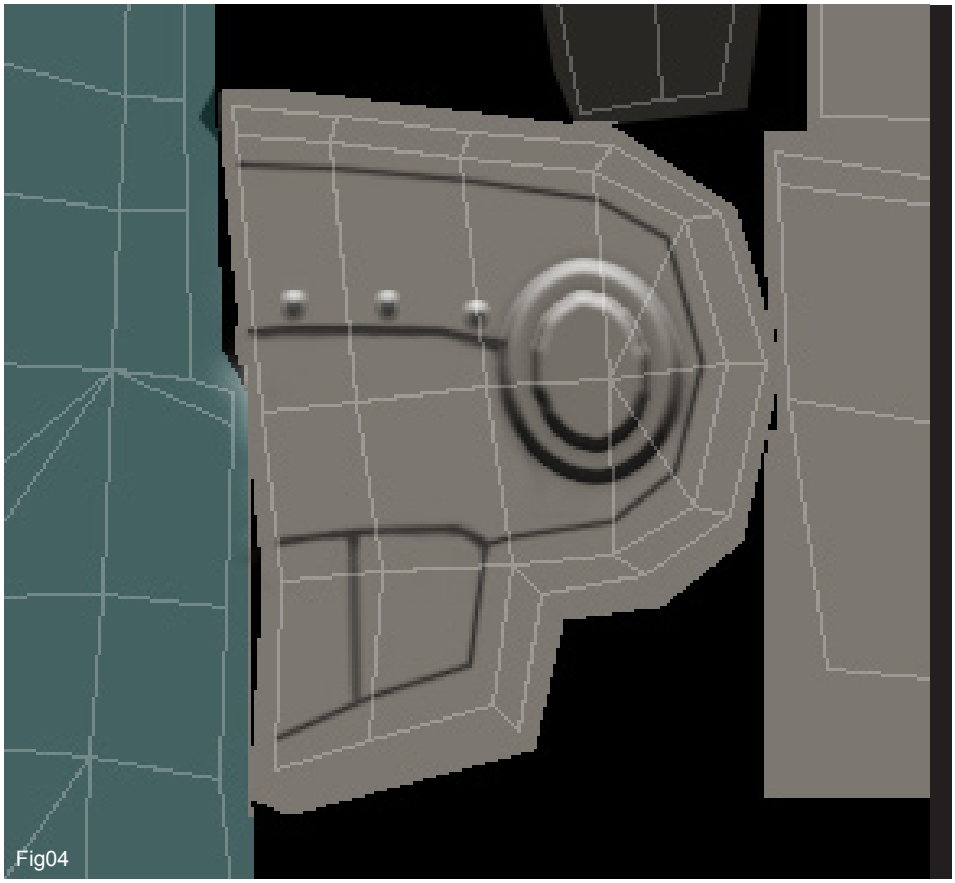
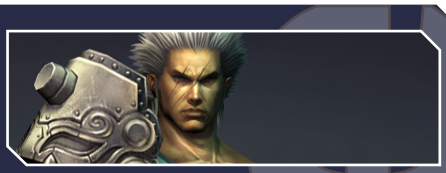


Fig04

4. Now add one more layer and start to draw in some outlines that will trace the shape of the elbow pad and create some extra detail, as seen in Fig.04.



5. Now, believe it or not, that is essentially the structure of our elbow pad. It doesn't look finished yet but with a few minor tweaks it will be. As this is a relatively small area on the template we are going to apply our final adjustments on the main colour block layer, as opposed to adding any further layers. You can either use the Colour Dodge / Burn tools or choose lighter and darker shades of grey to do this - both methods will require some painting by hand. We are aiming for something similar to Fig.05, in which you can see some modulation to help emphasize the grooves and curvature of the metal. Already we can see an improvement, but one final layer will create the finishing touch.

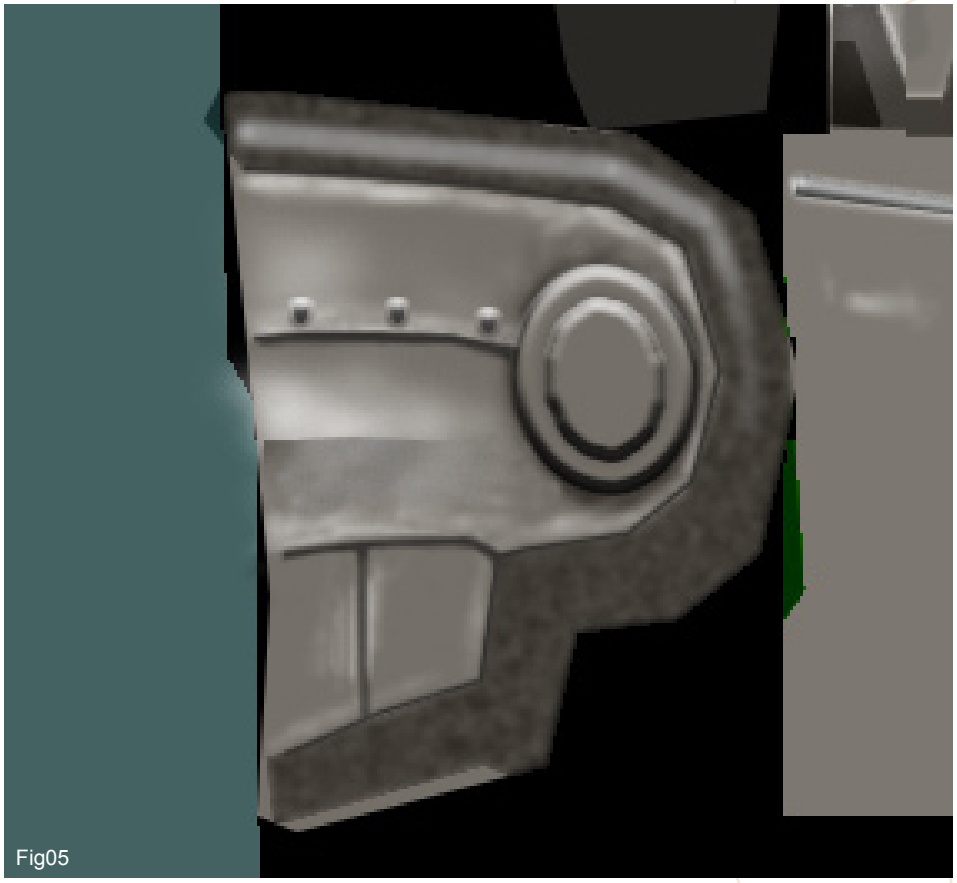


Fig05

6. This will be a metal overlay which shall eventually be used on all of the armour and so must be near the top of our layer stack. Choose any photo of metal that demonstrates the right kind of scale and then set it to 'multiply' and lay it over the top, making any colour / tonal adjustments as required (Fig.06). This then describes the general process we will apply to all of the armour sections, no matter how complex. Use the marquee / selection tools to add shapes followed by Layer Effects to add in detail and lighting. Then, either on a new layer or on the base colour, paint in the refinements, such as shading and highlighted edges etc. You can then clone parts of the metal overlay onto the designated area to complete the armour. Remember to use a guidelines layer initially, as we did with the skin section, to check the integrity of your mapping – no point in spending half an hour painting an area of detail only to find it is not correct on the model!

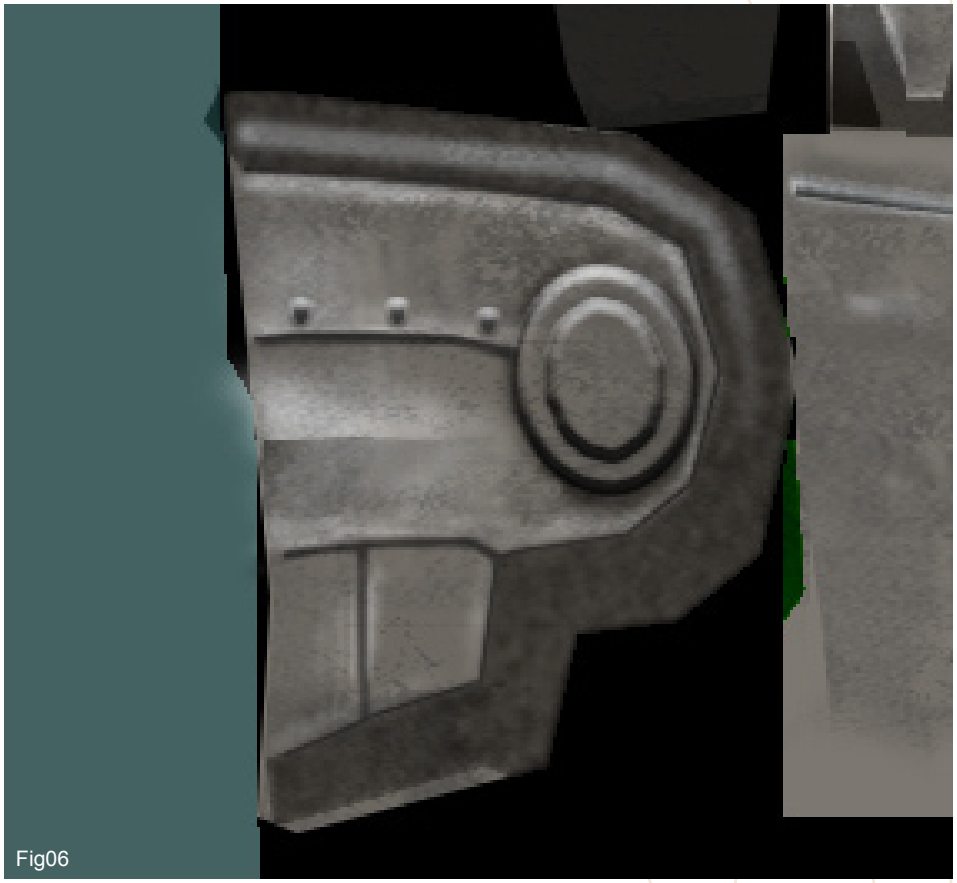


Fig06

7. Now on to the hand - a quite small but highly

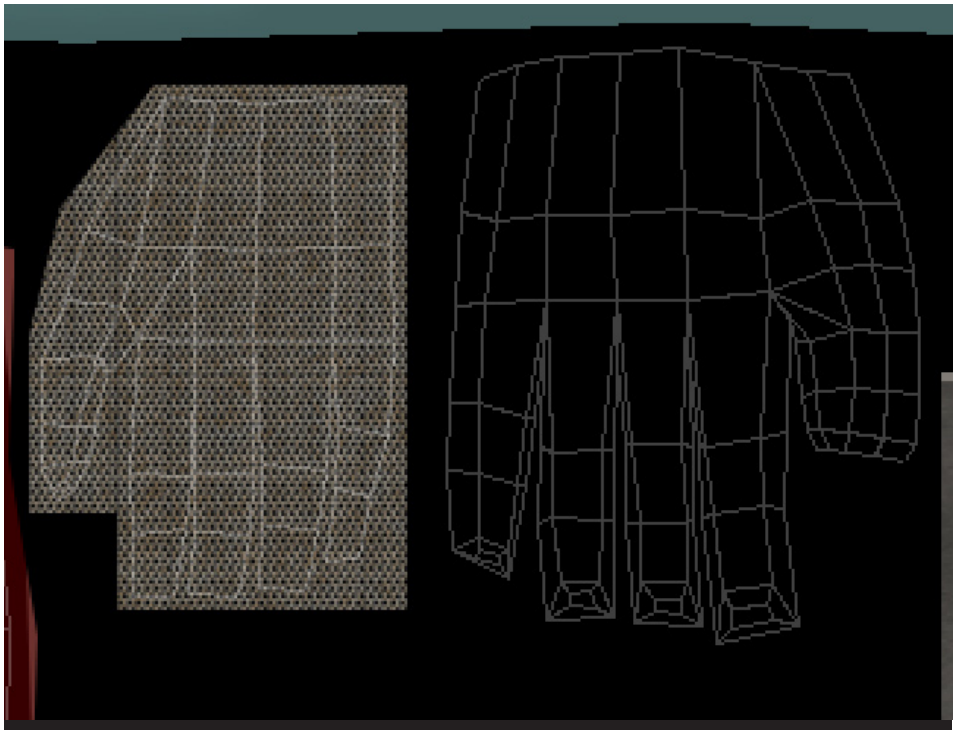


Fig07

detailed area. The first step is to find a suitable image of chainmail which can then be copied into our template and scaled to a sufficient size, as seen in Fig.07, to form the palm.

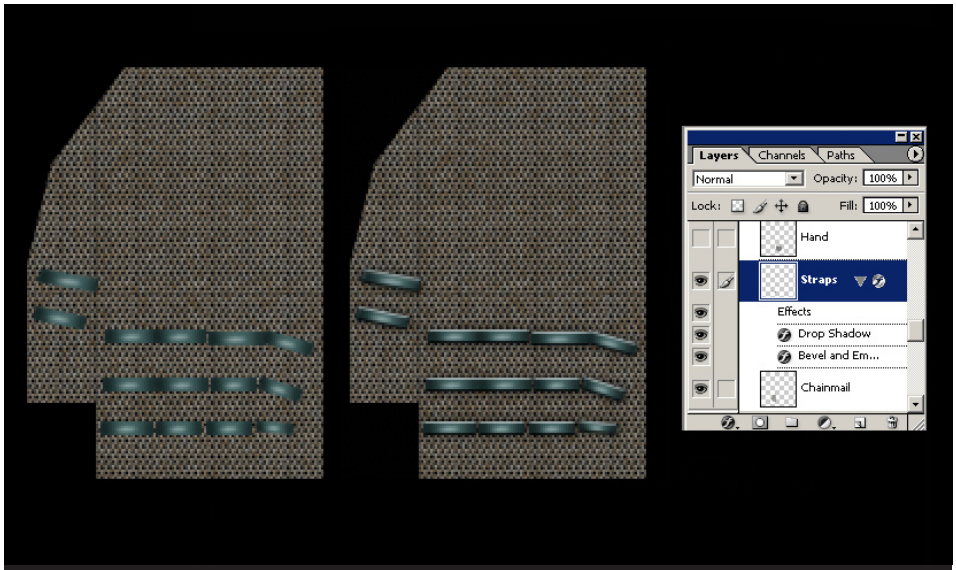
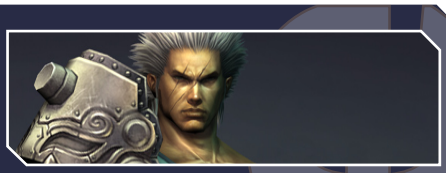


Fig08

8. Now add a series of straps across the fingers with a slight shadow at the edges and a small highlight in the centre, as seen on the left in Fig.08. Next step is to add two layer effects, seen on the right in the layers palette, which will help define them further.

9. The top of the hand, which shall be armour-



plated, will be a little more intricate. First of all, use the guidelines layer as a gauge by drawing in the outlines of the metal plates, as seen in Fig.09.

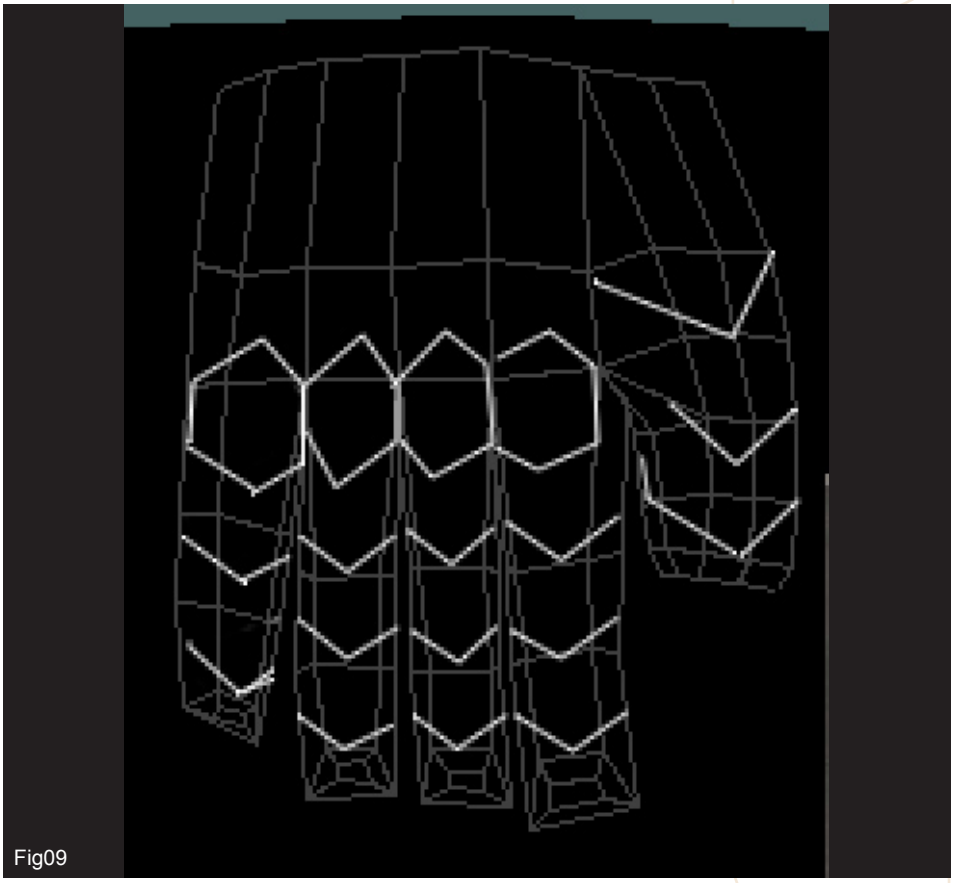


Fig09

10. Now make separate selection groups around the guidelines so you end up with a series of shapes, as seen in Fig.10. Afterwards you can fill in with a flat grey colour, consistent with the rest of the texture, and when you apply the layer effects they will occur on each piece.

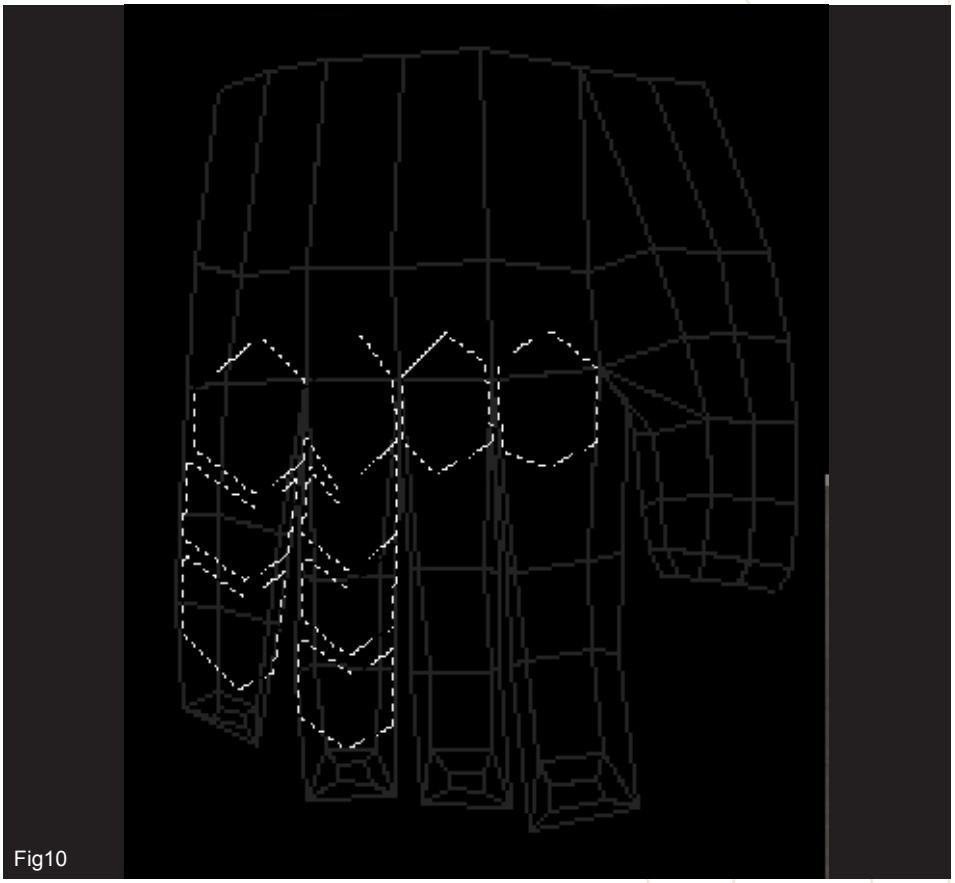


Fig10

11. In Fig.11, you can see the effects of the two

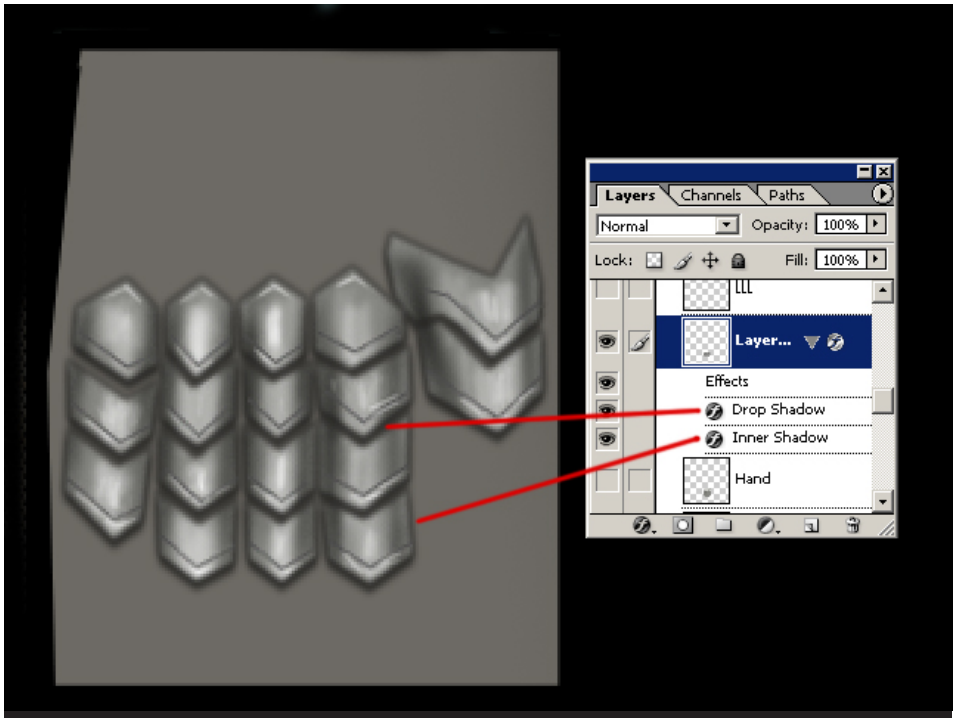


Fig11

layer styles that have been applied; the inner shadow which provides a dark outline and the drop shadow which is below each piece.

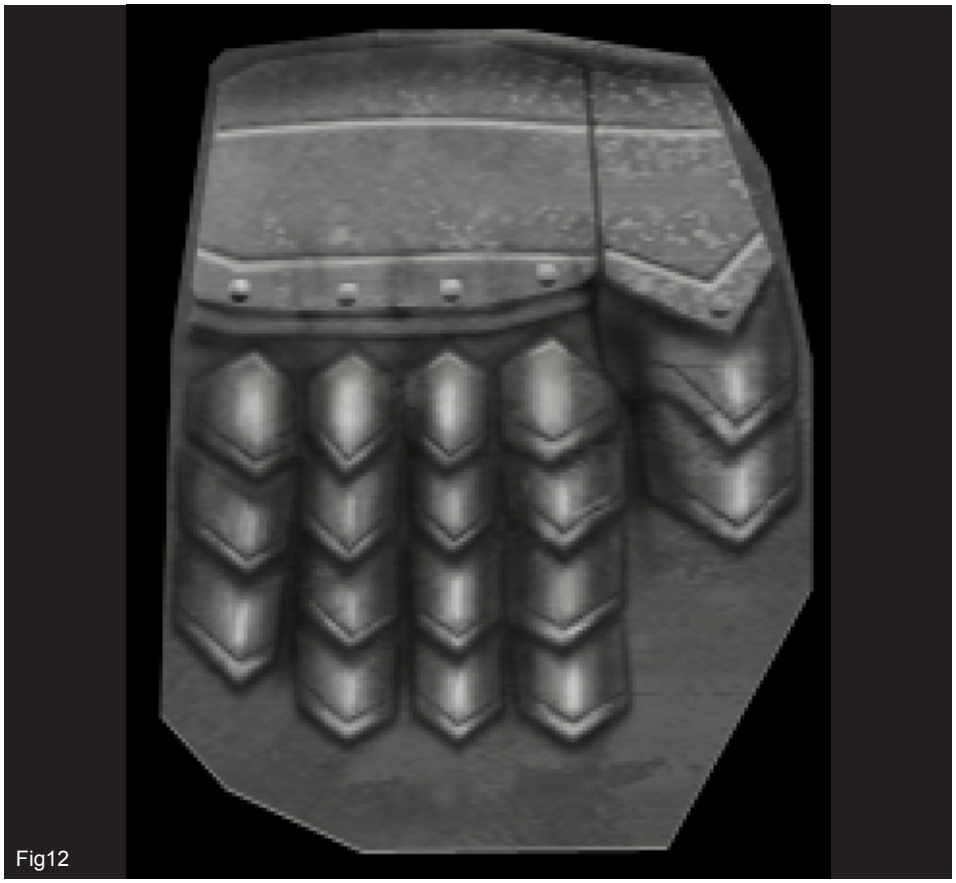
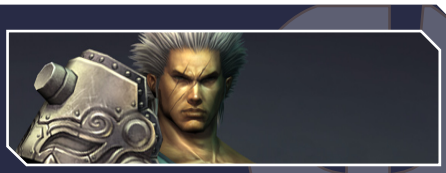


Fig12

12. Now when we overlay some more of our metal texture and some finishing touches, we end up with something like Fig.12. You can see here that I have added some shadows between each finger, together with some highlights across the tops. I have also created some rivets, as before, and painted in some lines to further embellish the hand. When tackling the rest of the armour, follow these procedures and be mindful of the fact that you want there to be an ambient light source above the character.

13. Now for something that features quite



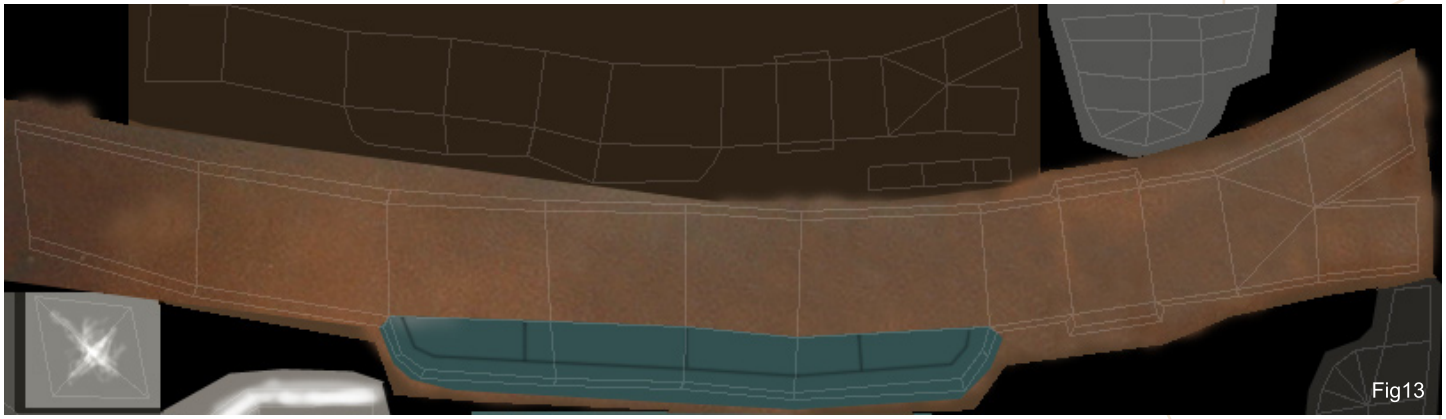


Fig13

heavily on our template – the belts. There are three altogether and all are made in a similar fashion. Block in the base colour and then find a suitable photograph of some leather and paste it over the top in a new layer. Set the blending mode to 'multiply' and alter the hue, brightness and saturation accordingly. This will give you a good starting point, similar to Fig.13.

14. We can now position the rivets which we do on a new layer by using the circular marquee tool set to a fixed aspect ratio, as seen along the menu bar in Fig.14. The way to paint these is to first fill in a circle with a grey colour. Then go to Select > Modify > Contract and choose about 3 pixels, dependant on the size of the circle of course. Then delete the inner portion until you are left with a simple ring. All you need to do now is apply a Bevel and Emboss effect and "voila"! Now simply Ctrl + Alt drag two more to finish.



Fig14

15. Next we will add two indentations where the

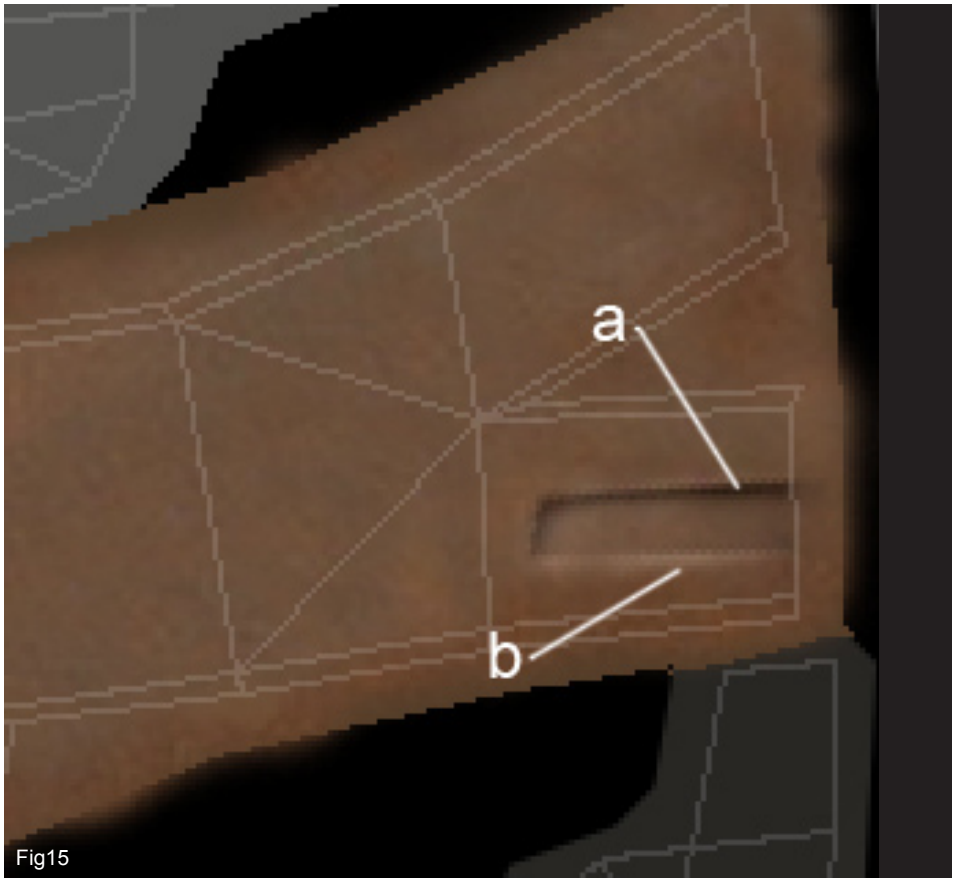
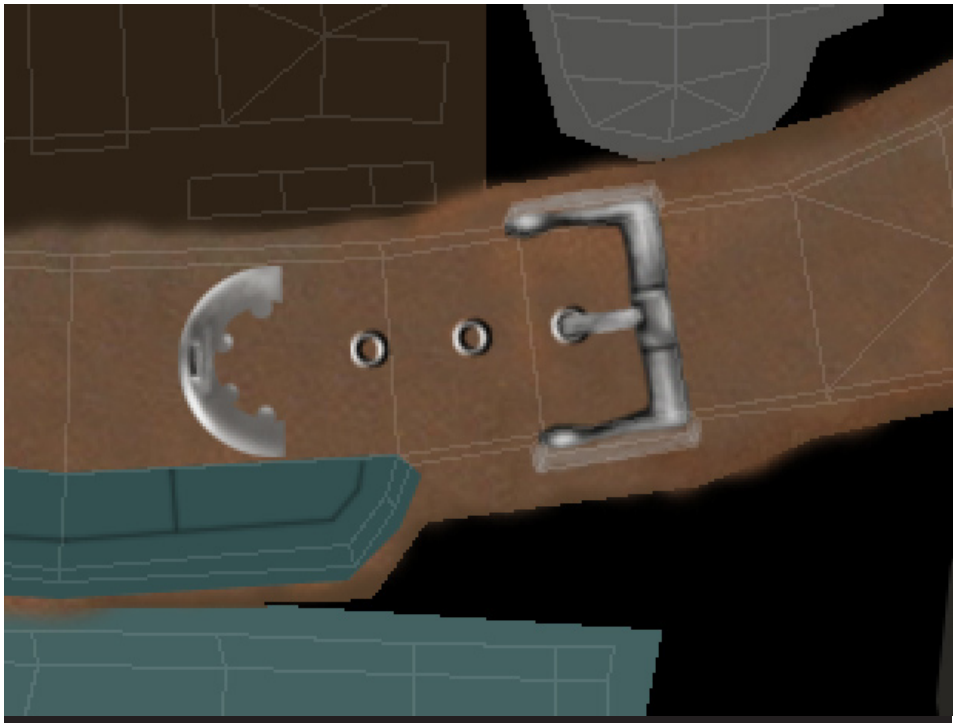


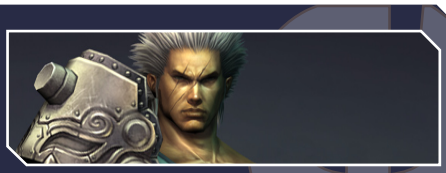
Fig15

belt forms two straps. You can do this on the main colour layer as it is relatively simple. Make a rectangular selection and paint in a dark band under the top edge (a), as shown in Fig.15. Now invert the selection (shift + Ctrl + I) and lighten the lower edge to form a highlight (b). Now do the same on the upper strap to finish off.


Fig16

16. The two other details that are still missing are the buckles. Again, these will be done on separate layers in order that changes can be made quickly. In Fig.16, you can see two buckles that have been painted in. To create the left one make a circular selection and fill in with a grey colour. Now contract this selection group and hit 'delete', leaving a ring, as we did with the rivets. Now delete half of the remaining shape and use the circular selection once again to add the small semi-circles around the inner-edge. Now just use a brush to add in the highlights and shadows manually. These elements are best done by hand in the end and so there are no clever tricks to speak of, just an awareness of where you want the light source.

17. The next stage involves adding in rivets and



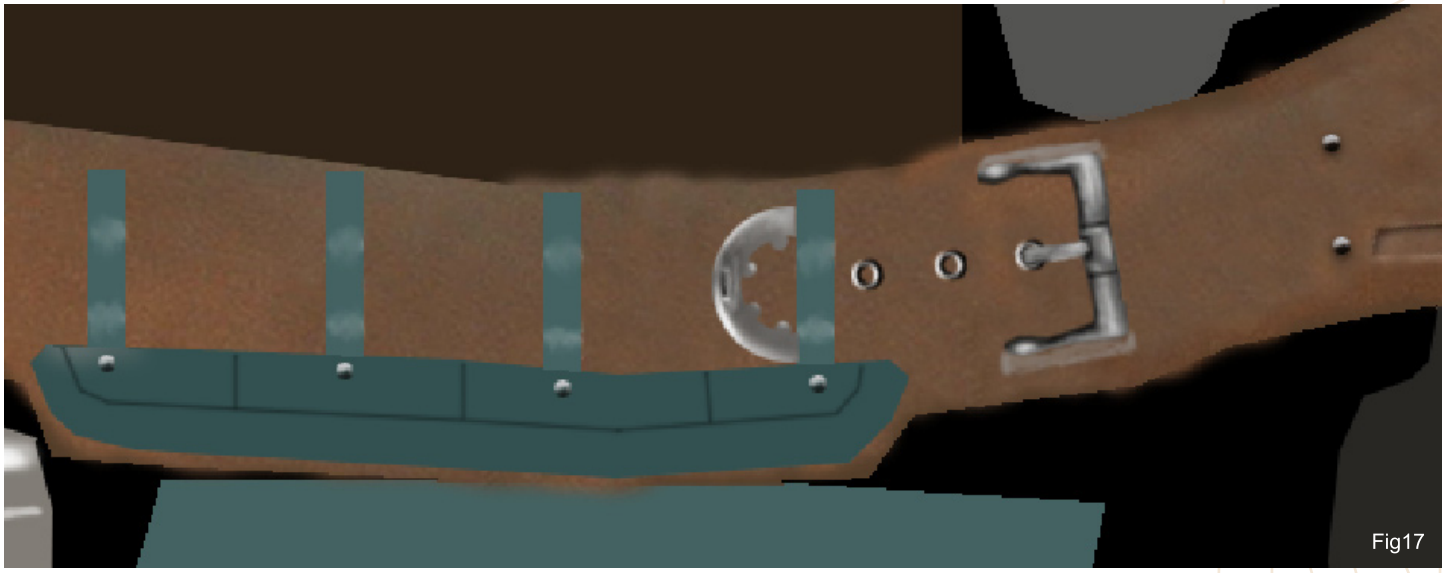


Fig17

a few vertical straps, as shown in Fig.17. You can see that I have also painted in highlights across the middle of the straps.

18. To complete the belt we now need to add in the shadows and highlights which can be done using two new layers, as with the skin in last month's instalment. In Fig.18, you can see that I have placed some general shading around the centre of the belt, as this area falls under the arm, and also made sure there is a shadow around the buckles which helps fix them to the leather and avoid the appearance that they may be "floating", as it were. Again, I have added some thin stitched lines along the length which can be traced by a highlight.

19. In Fig.19, you can see the final version with the highlights



Fig18

Fig19



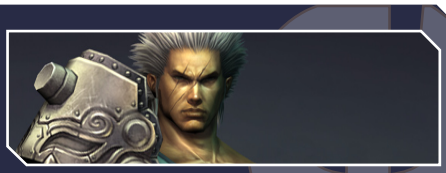


Fig20

concentrated at either end, particularly on the right where the belt is folded. The three edges surrounding the triangular hole would catch the light and so show the brightest highlights. You can follow the same procedure for the remaining two belts not forgetting to overlay the leather reference for each.

20. So far we have dealt with techniques used to paint the metal armour and leather belts, but one area yet to be covered is that of cloth. This will feature on the trousers, as well as the banner hanging from his waist. The first step is to block in the base colour, as seen in Fig.20, along with two seam lines.

21. Now using a shadows layer set to 'Multiply',



start painting in the direction of some of the folds using the same colour as the trousers. Using a standard soft round airbrush they will naturally come out darker due to the layer blending mode. Use a larger brush to begin with to get a soft-edge and then reduce the size of the brush to sharpen crease lines. In Fig.21, you can see the arrows which dictate the direction of the creasing. Try and vary it slightly as there is always variety where folds are concerned.



Fig21

22. Now, on the highlights layer (Set to Soft Light), simply trace around the shadows to emphasize them as well as placing a few strokes in between, as shown by the arrows in Fig.22. Bear in mind which areas will receive more direct light (in this case the outside of the leg) and focus the stronger highlights in this area. Use a colour that is almost white, but with a shade of the green, in the trousers, which will help. Use a small, soft brush to add crisp edges to some of the more extreme creasing down the outside of the leg. Generally, creases appear more around areas of tension such as joints - hence the detail around the groin, so keep this in mind.



Fig22

23. One final layer, to help provide some subtle

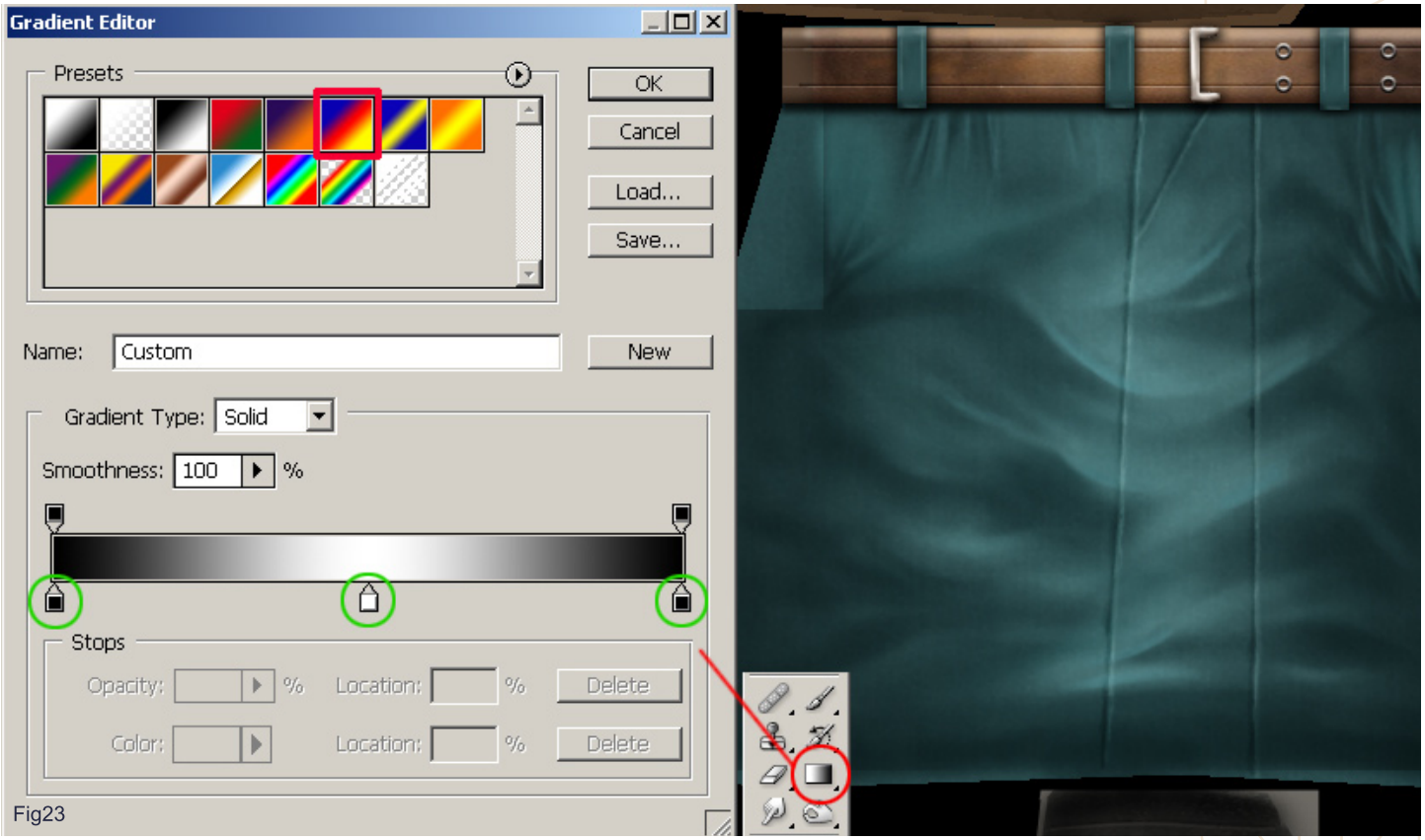


Fig23



shading, can be added on top of the previous three. This will incorporate a Gradient, which can be found on the toolbar (seen ringed in red in Fig.23). First of all, create a selection area around the wireframe containing the trousers and then click on the gradient tool. This will open up a dialogue box, similar to that on the left. Now select the preset in red along the top of the editor and proceed to click on the three tabs under the gradient bar ringed in green. Change the colours to black, white and black, as shown, and then drag a line from the left of the trousers to the right, making sure that the layer mode is set to 'Multiply'. You should now see a consistent shadow down the edges of the trousers, fading away in the middle, as seen on the right. A similar approach can be used on the waist banner, except that is for the gradient. Begin with some broadly painted shadows using a Soft Round airbrush and then tighten the creases with a smaller Hard Round brush before emphasizing them with a highlights layer.

Conclusion.

Once you are satisfied that you have completed each of the components on the texture you can add a couple of finishing touches if you wish. These incorporate painting in some shadows around the clothing and armour, particularly under the shoulder piece and elbow guard. This will just emphasize the geometry and add a richer and deeper contrast to the shadows when the character is placed in a scene. You will notice that the trousers have not been unwrapped in their entirety and so it will not be possible to place a shadow under the waist belt and banner, as it would be mirrored on both sides. Ideally you should unwrap both legs in order to solve this problem but, for the sake of saving time, I have neglected to do this. One remaining aspect you can add is some wear and tear to the clothing and armour through dirt maps. Finding a suitable image of rusted metal will provide a good base from which to extract some detail which can be colour adjusted and then overlayed.

You could use a mutiply mode to add dirt/rust, or perhaps Soft Light / Screen to add scratches. Have a go and see what you can come up with. You could also try using Layer Effects – Bevel / Emboss to add dents and create a battle hardened look. This, I hope, covers most of the crucial aspects of the texturing phase of the tutorial.



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The Swordmaster

lightwave

Is our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3D applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications. Over the next 8 months we will outline, in detail, the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

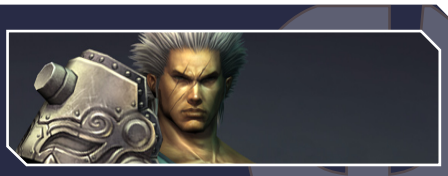
Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

Enjoy ...



Part 8
Texturing Armour and Clothing.

Introduction

We have finally arrived at the end of this series of tutorials. Last month we covered the initial stages of texturing the character by painting in the skin and hair. This month concludes with us adding the clothing and armour. As with the mapping section, this is a very detailed and lengthy process and there is simply not time to cover every aspect. Instead, I shall detail some of the key stages which can be applied to numerous areas of the template and hopefully provide a practical overview.

1. The clothing itself is by far the simplest to achieve as this will comprise of only two key layers of detail in the form of shadows and highlights, much like the skin previously. As such, we will start with the armour as this is a little more involved. We will begin with the elbow pad as this is a relatively small part of the armour, but one that utilises most of the techniques we shall use on the more dominant pieces. First of all, select a neutral grey and block in the area on the template and then, using the elliptical marquee tool, select a small area within the curved section. Now, on the main menu bar, click on Layer – Layer Style – Bevel and Emboss. Alternatively, you can click on the small "f" icon at the base of the Layers palette. This will bring up a dialogue box, similar to Fig.01. Here you can alter various settings that will determine the direction of light, along with the type and depth of bevel. You will notice that I have chosen an Emboss, and the angle of light is directly above in this case. This is because the orientation of the detail on the texture map is such that the top of the ellipse will be facing upwards on the character and hence the shadow will be underneath. Experiment with the slider bars and styles and observe the effects.

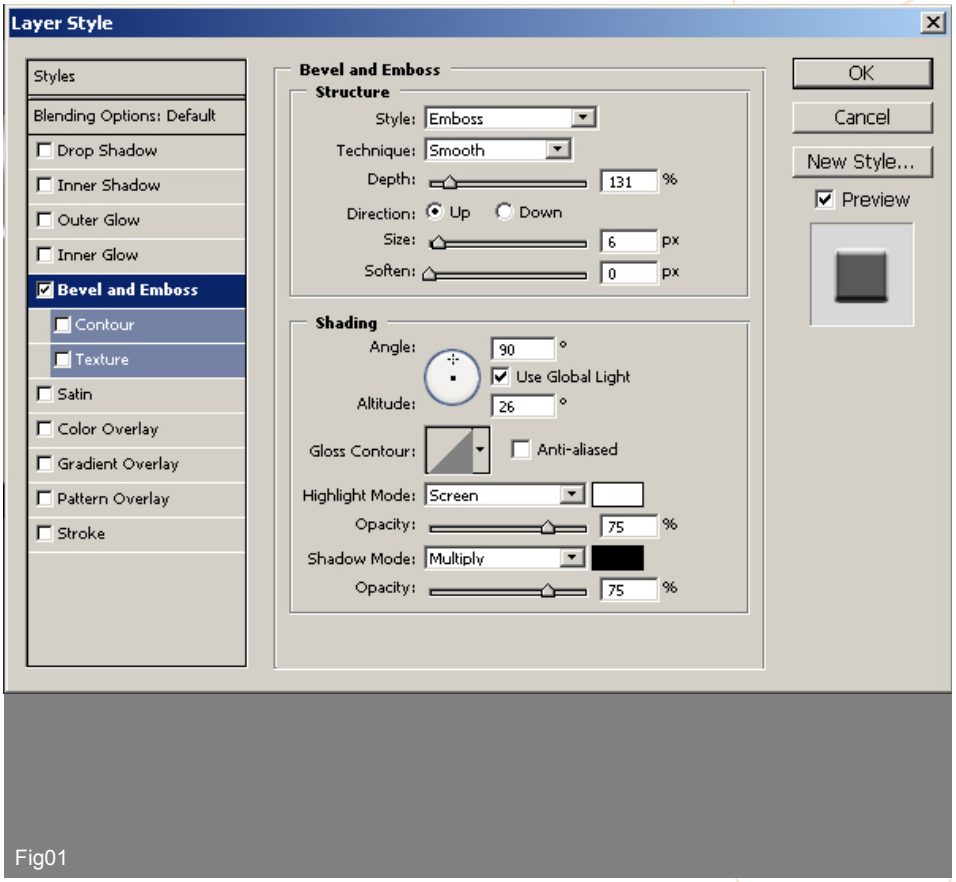


Fig01

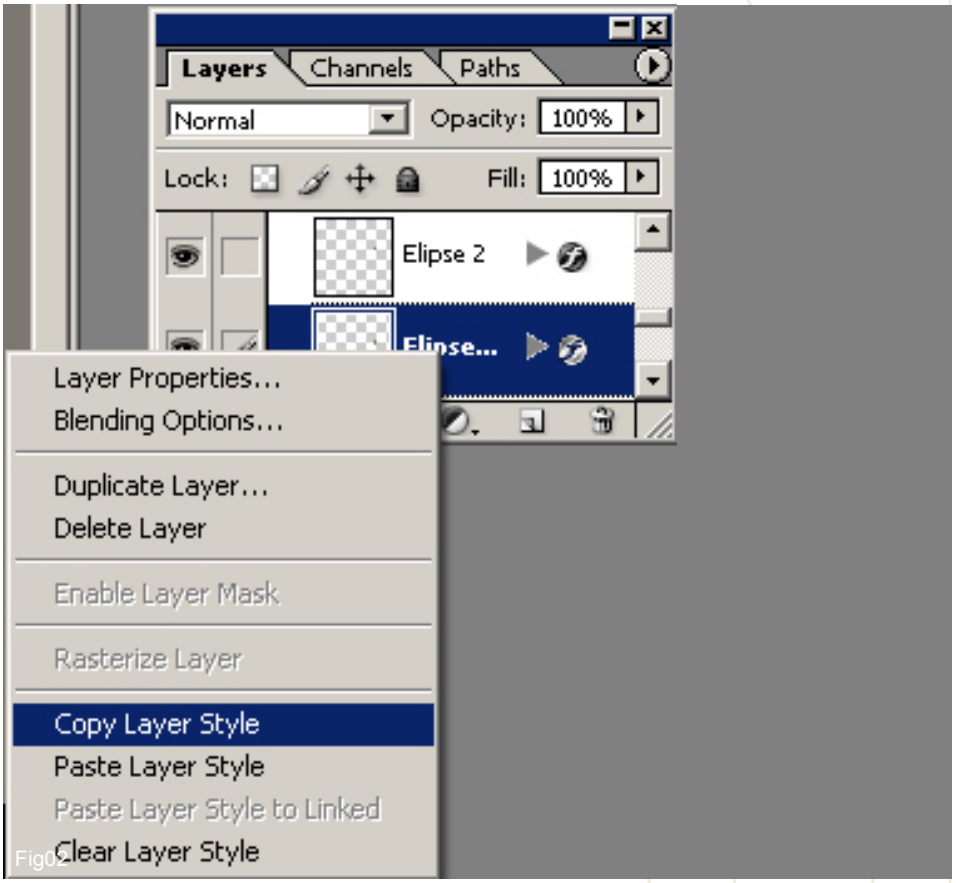
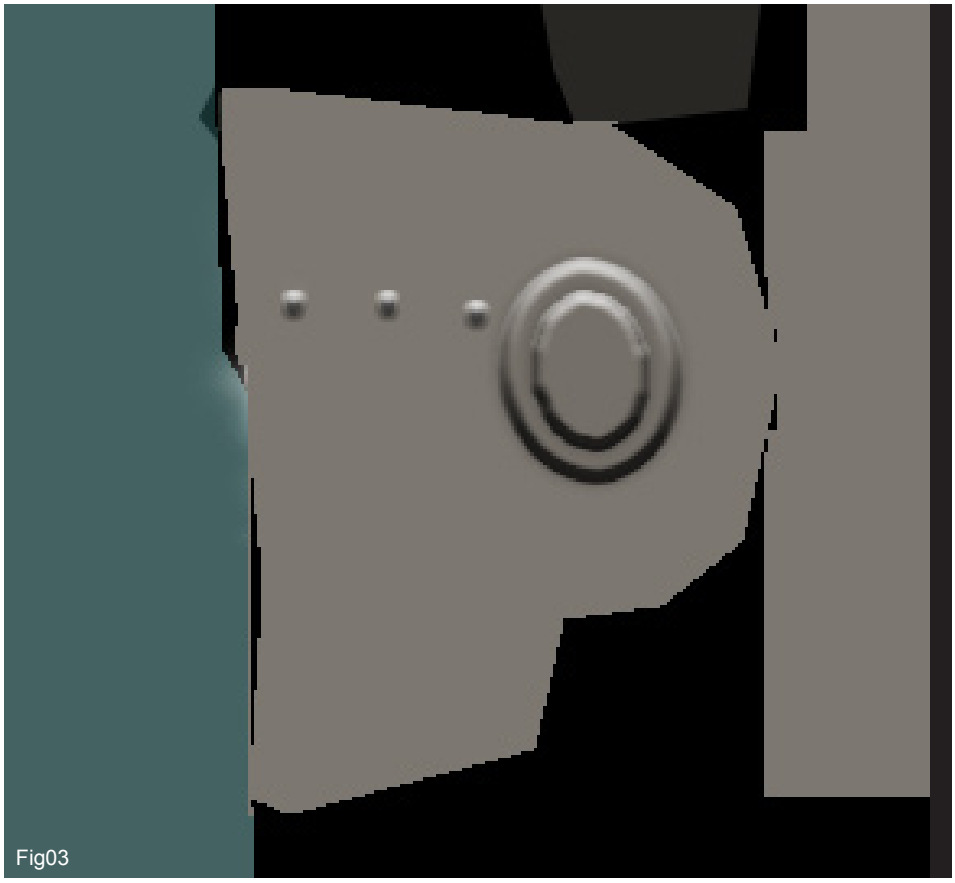
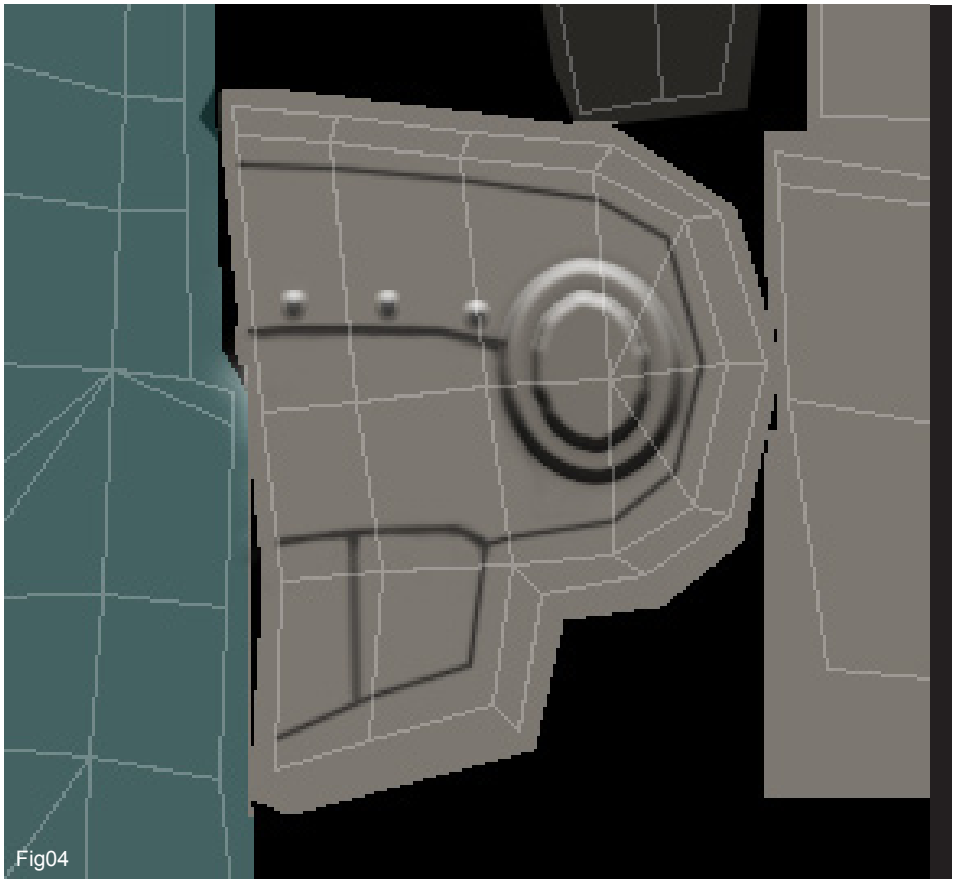


Fig02

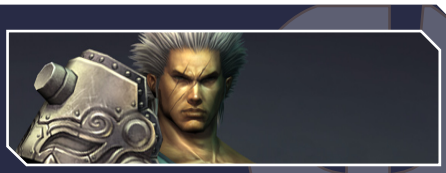

Fig03

2. One more thing which will help is to add a subtle Drop Shadow, which you can find at the top of the list. Check the tick box and then slide the Distance arrow down to zero and increase the Size and Spread until there is a soft shadow around the ellipse. Now, on a new layer, create a smaller ellipse inside this one and fill it with the same grey colour. Right click on the ellipse 1 layer and select Copy Layer Style and then paste this into the new layer, as shown in Fig.02. You will now have two ellipses that both incorporate an emboss and drop shadow.

3. On another new layer add in some rivet heads using the same technique, but perhaps leaving out the drop shadow (Fig.03).


Fig04

4. Now add one more layer and start to draw in some outlines that will trace the shape of the elbow pad and create some extra detail, as seen in Fig.04.



5. Now, believe it or not, that is essentially the structure of our elbow pad. It doesn't look finished yet, but with a few minor tweaks it will be. As this is a relatively small area on the template we are going to apply our final adjustments on the main colour block layer, as opposed to adding any further layers. You can either use the Colour Dodge / Burn tools or choose lighter and darker shades of grey to do this - both methods will require some painting by hand. We are aiming for something similar to Fig.05, in which you can see some modulation to help emphasize the grooves and curvature of the metal. Already we can see an improvement, but one final layer will create the finishing touch.

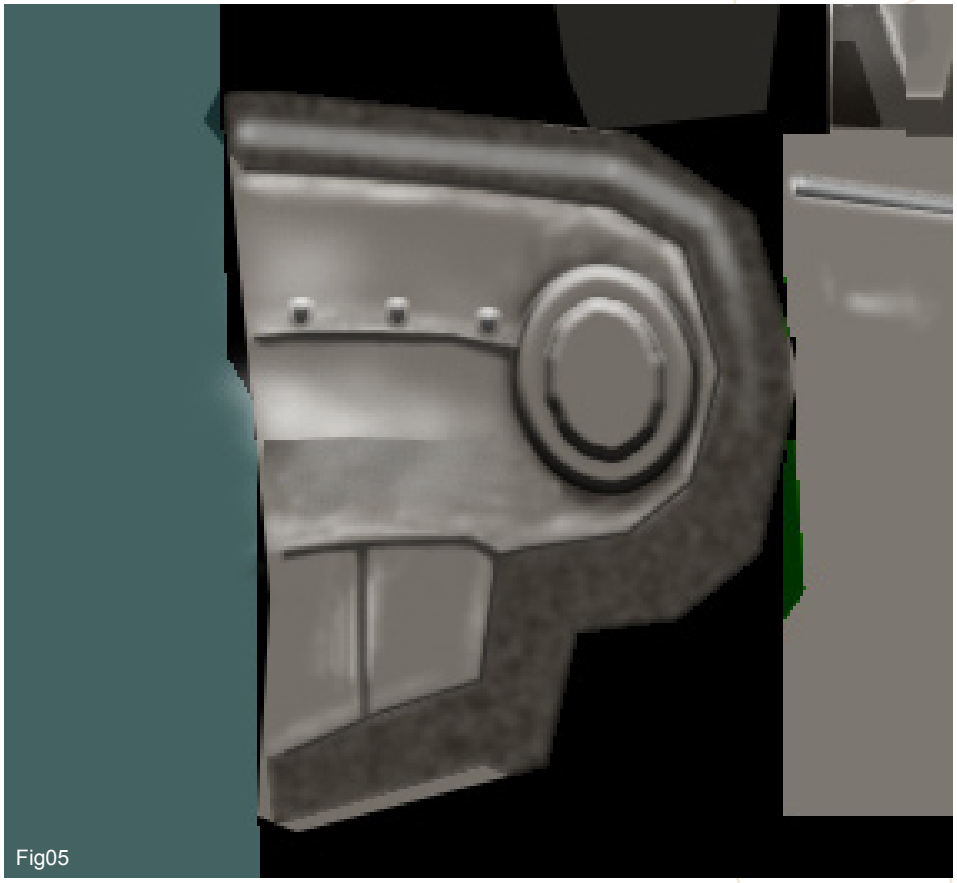


Fig05

6. This will be a metal overlay which shall eventually be used on all of the armour and so must be near the top of our layer stack. Choose any photo of metal that demonstrates the right kind of scale and then set it to 'multiply' and lay it over the top, making any colour / tonal adjustments as required (Fig.06). This then describes the general process we will apply to all of the armour sections, no matter how complex. Use the marquee / selection tools to add shapes, followed by Layer Effects to add in detail and lighting. Then, either on a new layer or on the base colour, paint in the refinements, such as shading and highlighted edges etc. You can then clone parts of the metal overlay onto the designated area, to complete the armour. Remember to use a guidelines layer initially, as we did with the skin section, to check the integrity of your mapping – no point in spending half an hour painting an area of detail only to find it is not correct on the model!

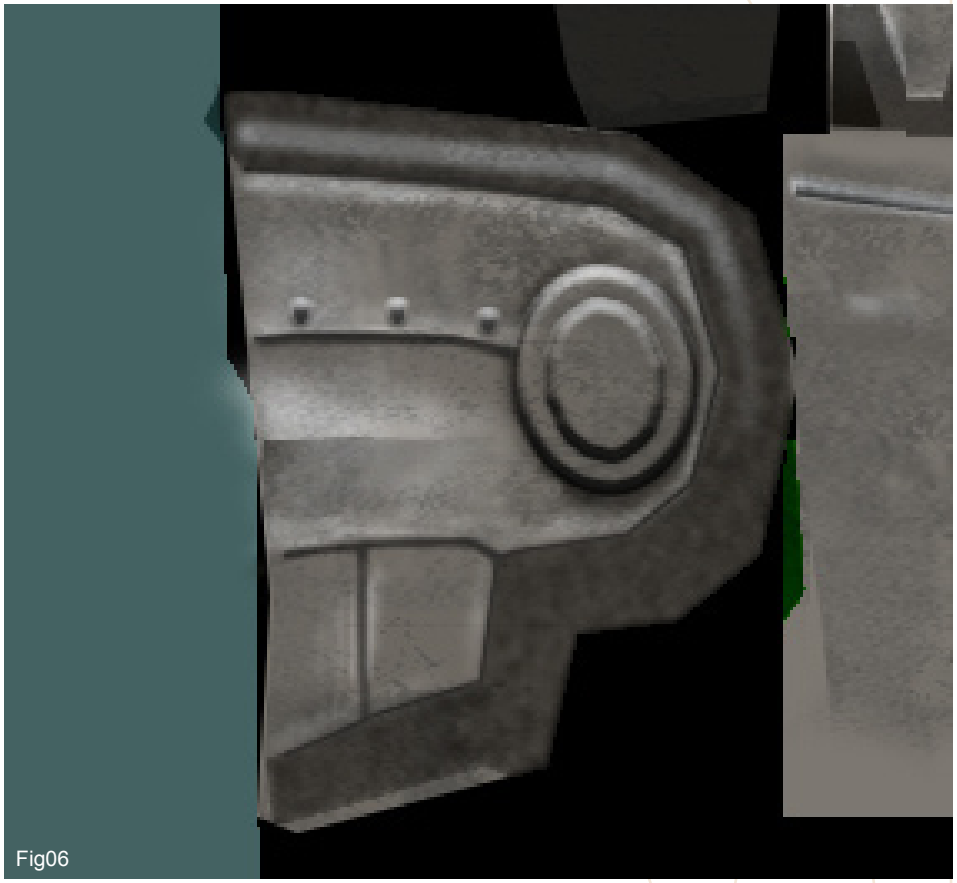


Fig06

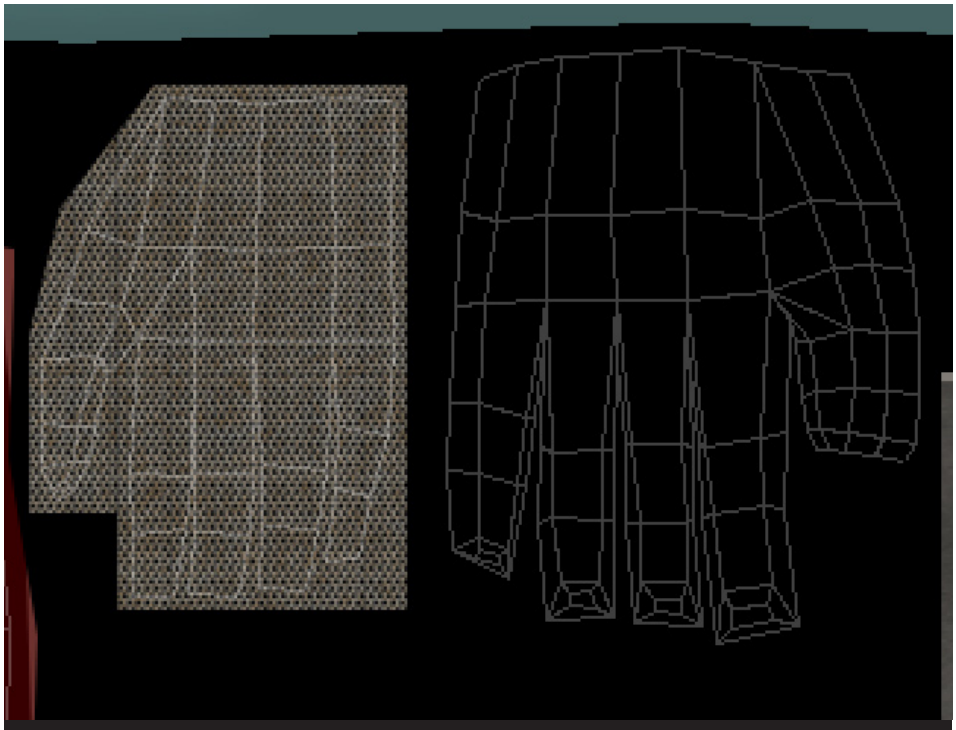


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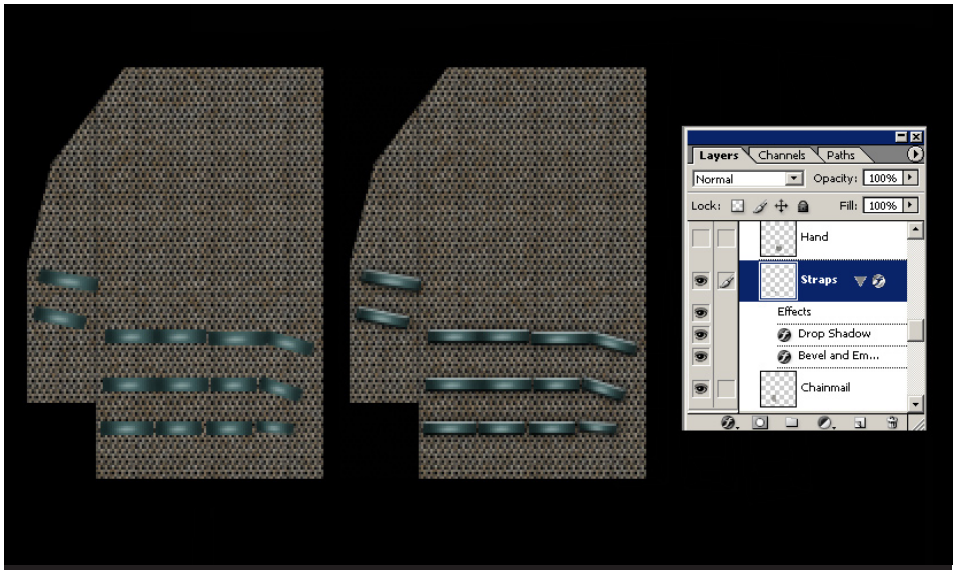
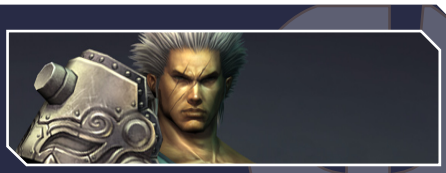


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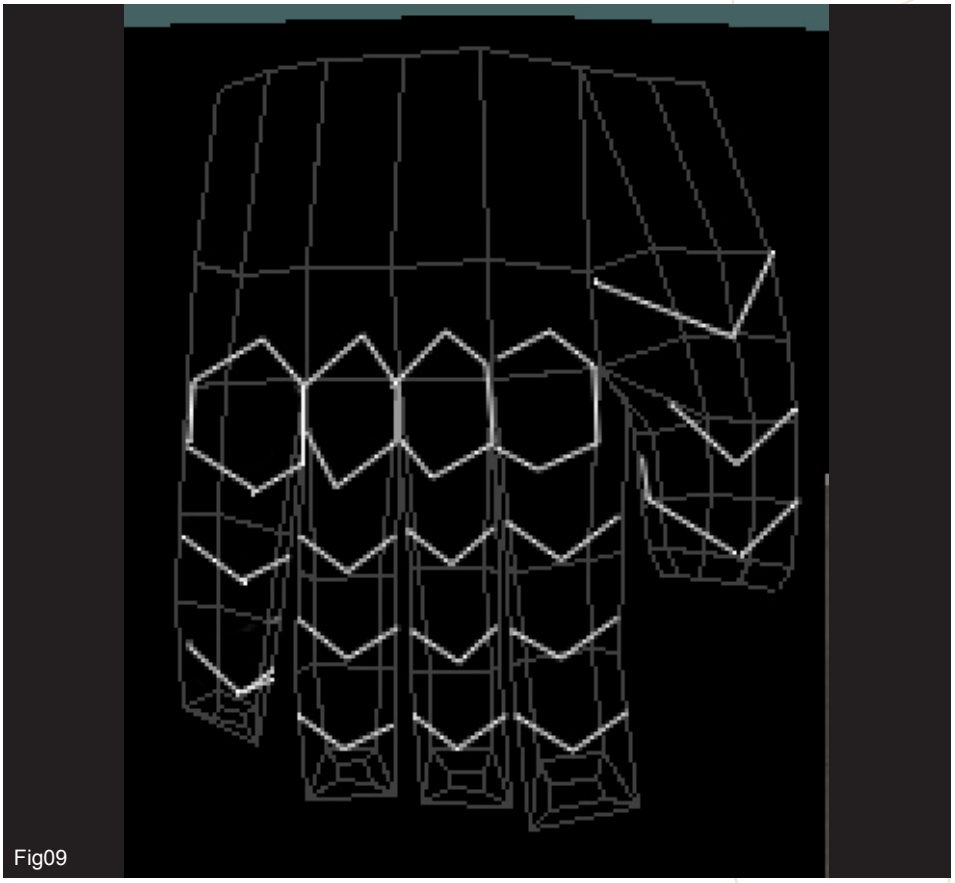


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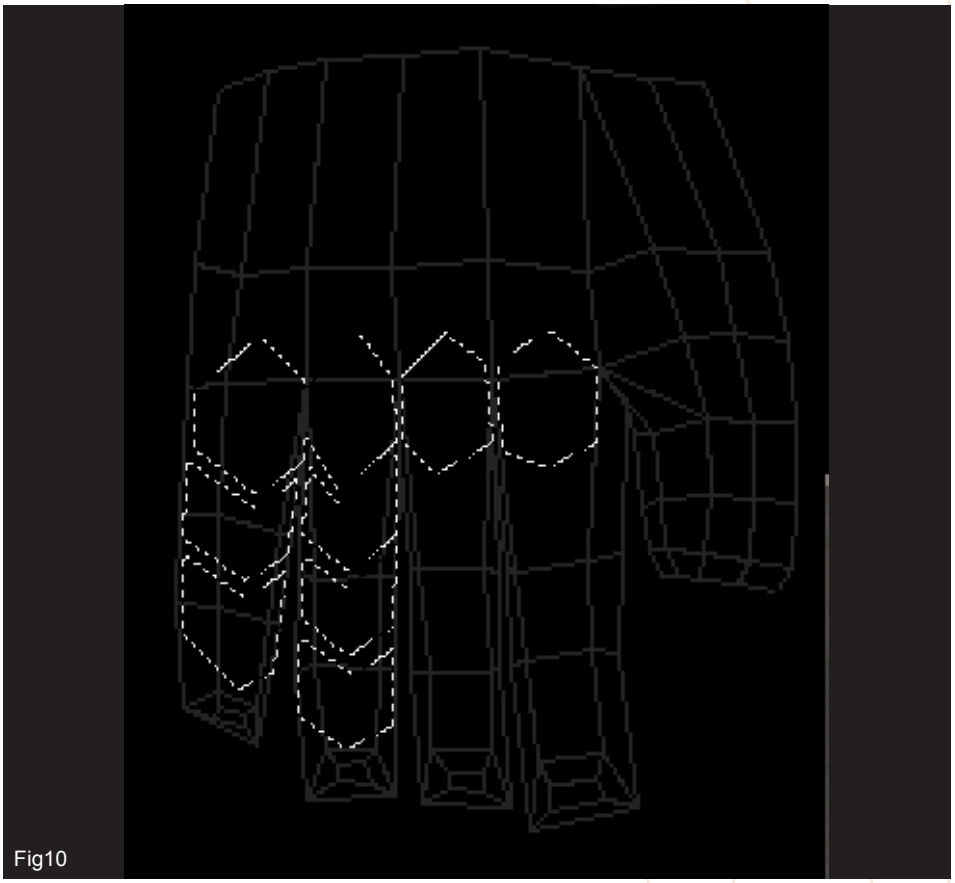


Fig10

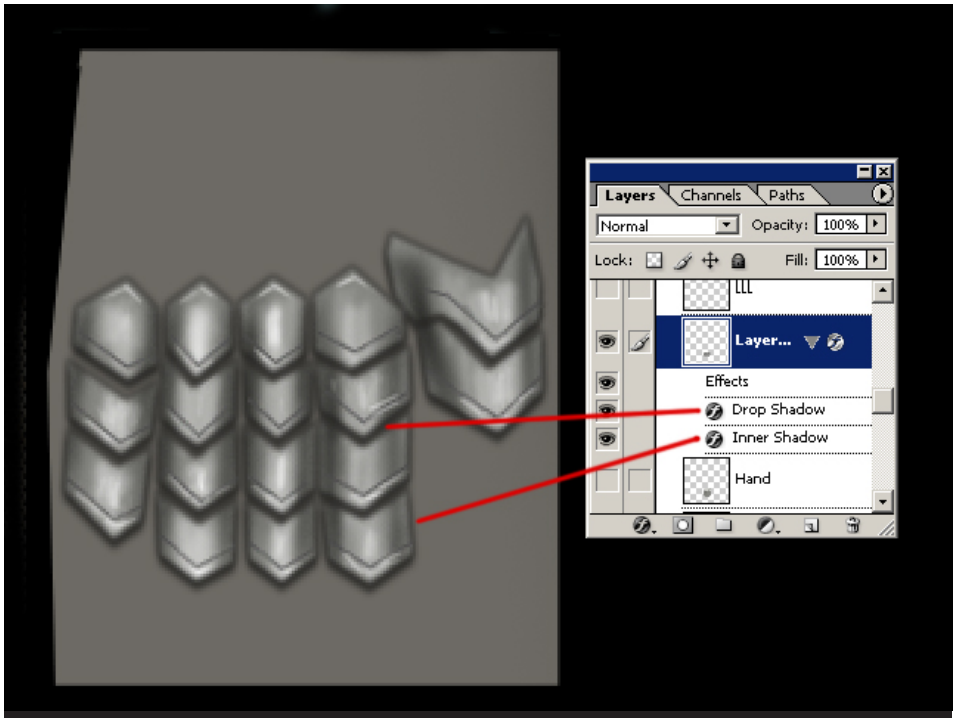


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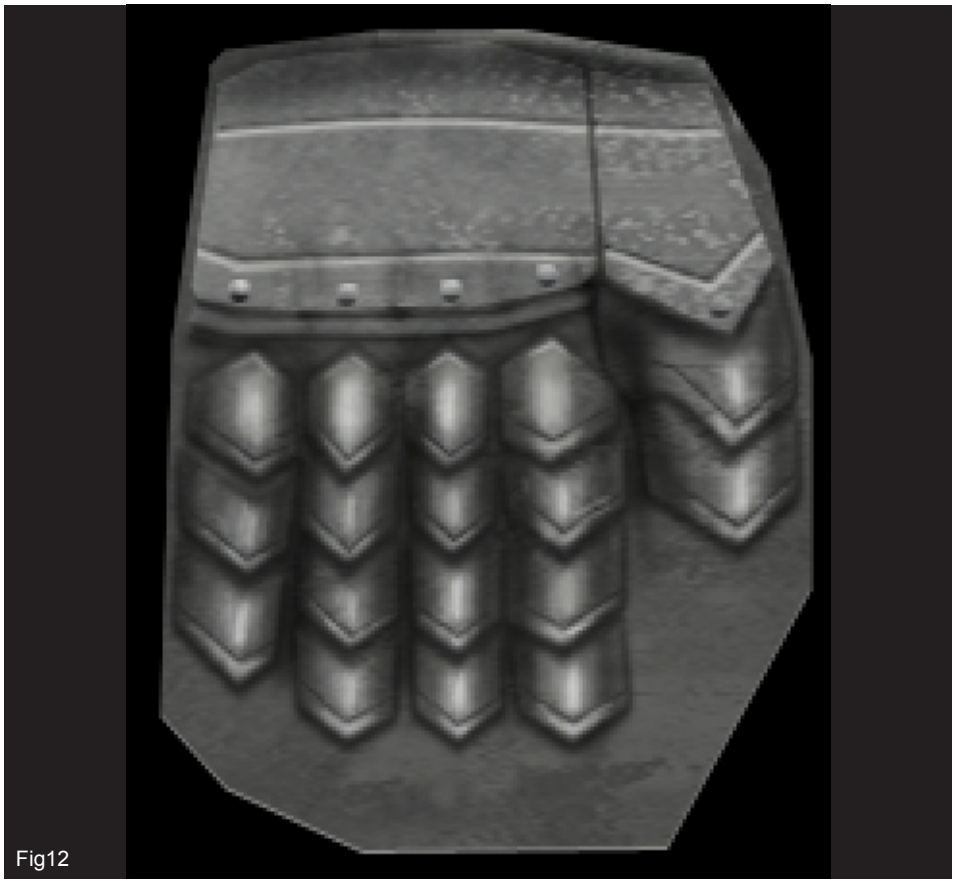
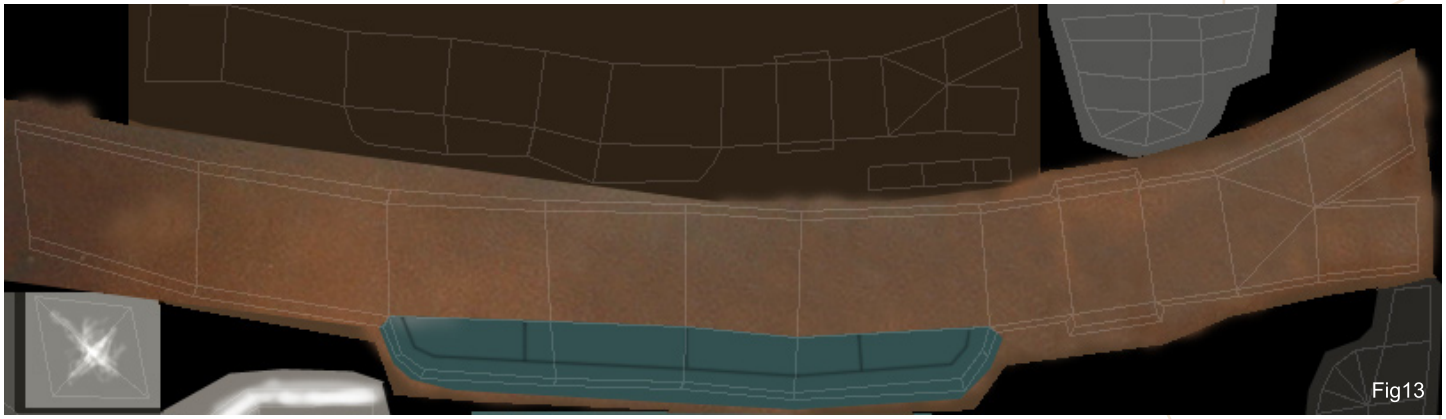


Fig12

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Fig13

13. Now for something that features quite heavily on our template – the belts. There are three altogether and all are made in a similar fashion. Block in the base colour and then find a suitable photograph of some leather and paste it over the top in a new layer. Set the blending mode to 'multiply' and alter the hue, brightness and saturation accordingly. This will give you a good starting point, similar to Fig.13.

14. We can now position the rivets, which we do on a new layer, by using the circular marquee tool set to a fixed aspect ratio, as seen along the menu bar in Fig.14. The way to paint these is to first fill in a circle with a grey colour. Then go to Select - Modify – Contract and choose about 3 pixels, dependant on the size of the circle of course. Then delete the inner portion until you are left with a simple ring. All you need to do now is to apply a Bevel and Emboss effect and "voila"! Now simply Ctrl + Alt drag two more to finish.



Fig14

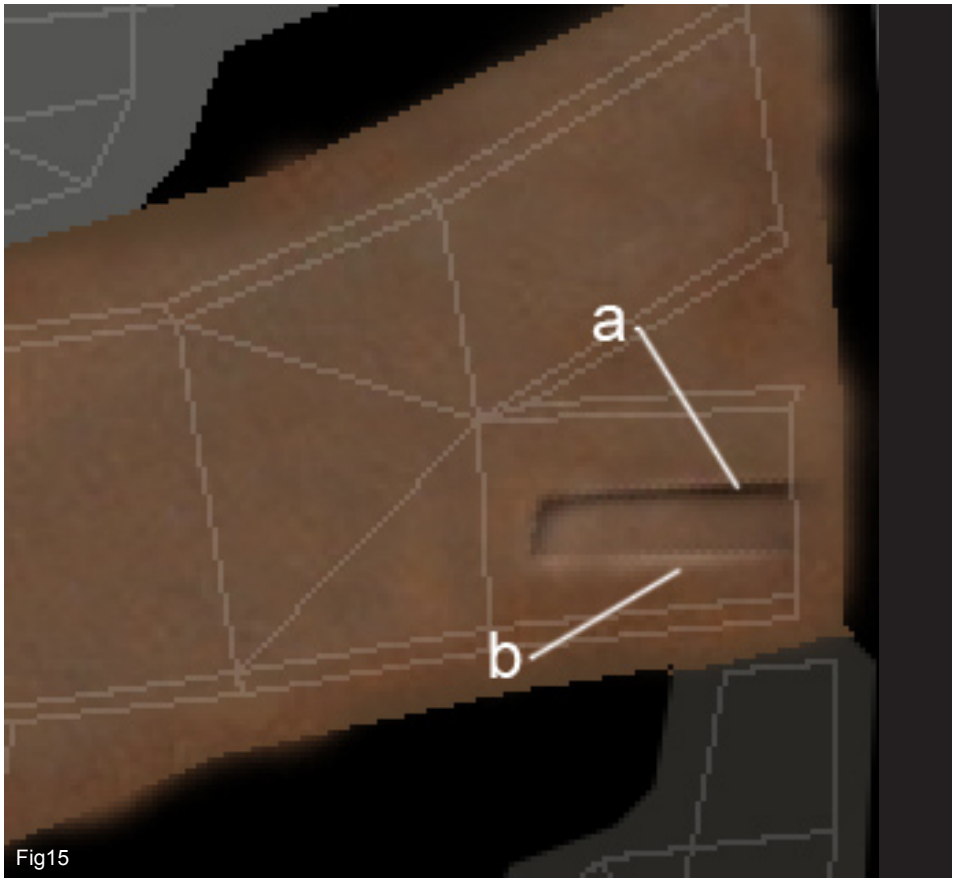
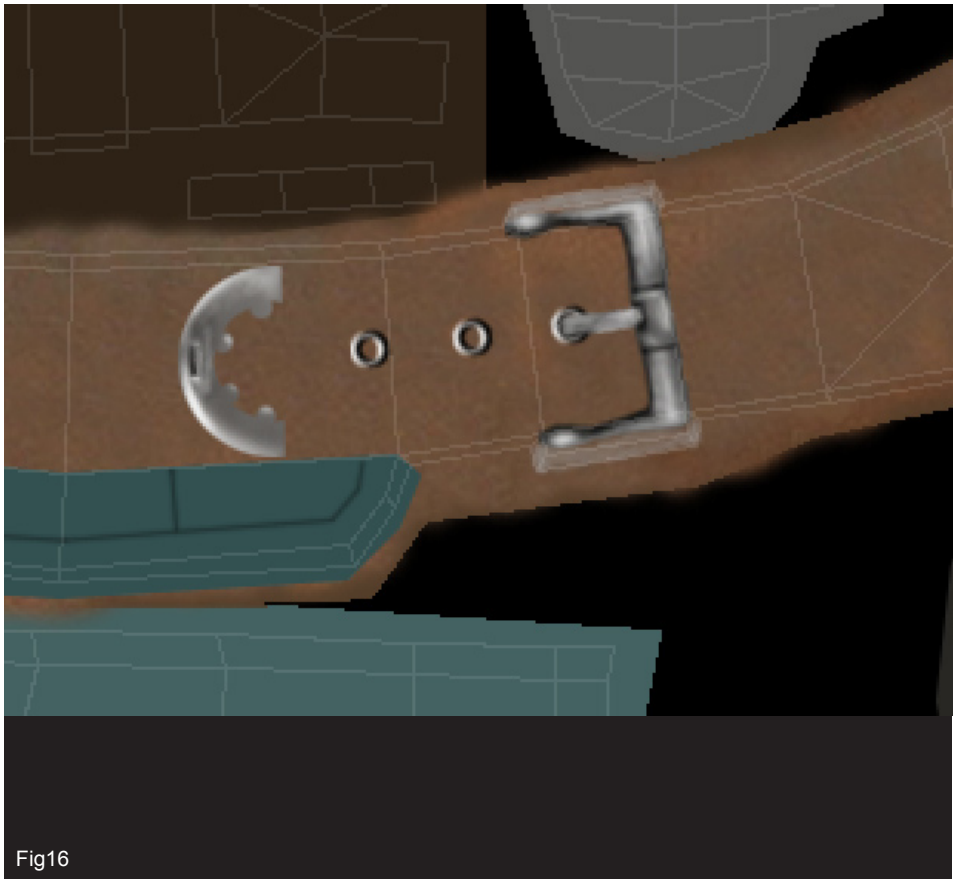
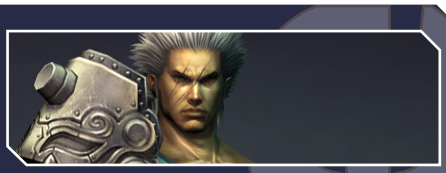


Fig15

15. Next we will add two indentations where the belt forms two straps. You can do this on the main colour layer as it is relatively simple. Make a rectangular selection and paint in a dark band under the top edge (a), as shown in Fig.15. Now invert the selection (shift + Ctrl + I) and lighten the lower edge to form a highlight (b). Now do the same on the upper strap to finish off.


Fig16

16. The two other details that are still missing are the buckles. Again these will be done on separate layers, in order that changes can be made quickly. In Fig.16, you can see two buckles that have been painted in. To create the left one make a circular selection and fill in with a grey colour. Now contract this selection group and hit ‘delete, leaving a ring, as we did with the rivets. Now delete half of the remaining shape and use the circular selection once again to add the small semi-circles around the inner-edge. Now just use a brush to add in the highlights and shadows manually. These elements are best done by hand in the end and so there are no clever tricks to speak of, just an awareness of where you want the light source.



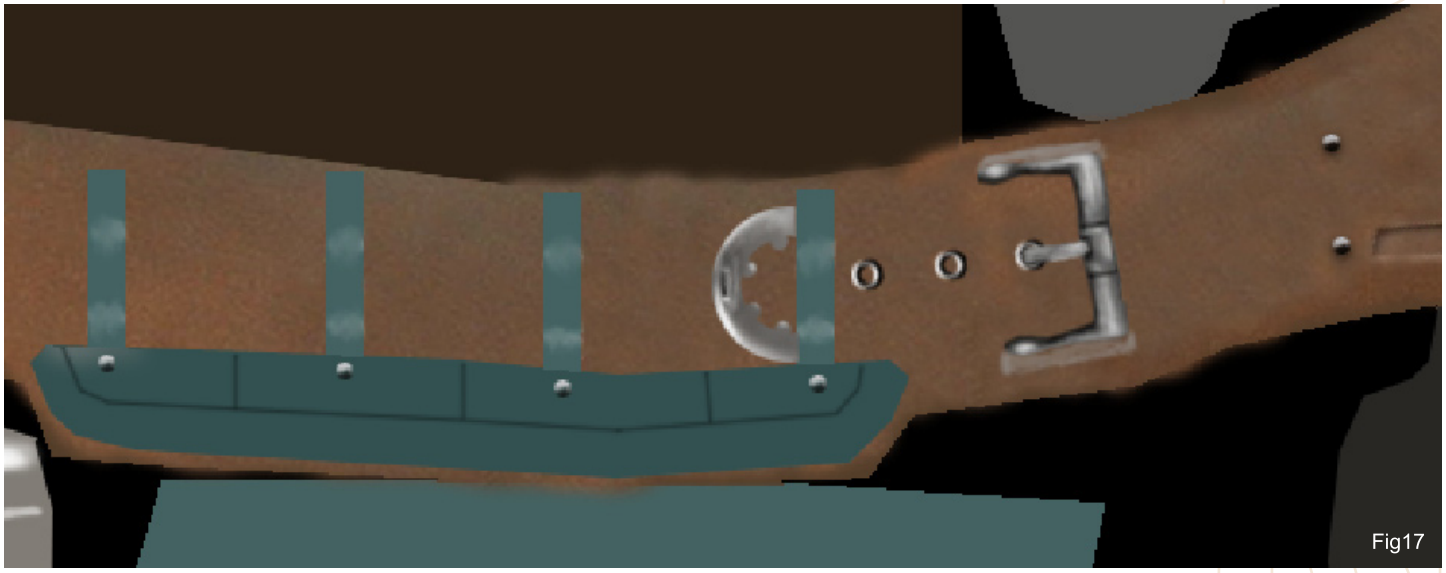


Fig17

17. The next stage involves adding in rivets and a few vertical straps, as shown in Fig.17. You can see that I have also painted in highlights across the middle of the straps.

18. To complete the belt, we now need to add in the shadows and highlights which can be done using two new layers, as with the skin in last month's instalment. In Fig.18, you can see that I have placed some general shading around the centre of the belt, as this area falls under the arm, and also made sure there is a shadow around the buckles which helps fix them to the leather and avoid the appearance that they may be "floating", as it were. Again, I have added some thin stitched lines along the length, which can be traced by a highlight.



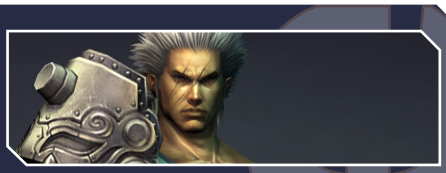
Fig18


Fig19


Fig20

19. In Fig.19, you can see the final version with the highlights concentrated at either end, particularly on the right where the belt is folded. The three edges surrounding the triangular hole would catch the light and so show the brightest highlights. You can follow the same procedure for the remaining two belts, not forgetting to overlay the leather reference for each.

20. So far we have dealt with techniques used to paint the metal armour and leather belts, but one area yet to be covered is that of cloth. This will feature on the trousers, as well as the banner hanging from his waist. The first step is - yes, you guessed it – block in the base colour, as seen in Fig.20, along with two seam lines.



21. Now, using a shadows layer set to 'Multiply', start painting in the direction of some of the folds, using the same colour as the trousers. Using a standard soft round airbrush they will naturally come out darker, due to the layer blending mode. Use a larger brush to begin with to get a soft-edge and then reduce the size of the brush to sharpen crease lines. In Fig.21, you can see the arrows which dictate the direction of the creasing. Try and vary it slightly as there is always variety where folds are concerned.



Fig21

22. Now, on the highlights layer (Set to Soft Light), simply trace around the shadows to emphasize them, as well as placing a few strokes in between as shown by the arrows in Fig.22. Bear in mind which areas will receive more direct light (in this case the outside of the leg) and focus the stronger highlights in this area. Use a colour that is almost white, but with a shade of the green, in the trousers, which will help. Use a small, soft brush to add crisp edges to some of the more extreme creasing down the outside of the leg. Generally, creases appear more around areas of tension, such as joints - hence the detail around the groin, so keep this in mind.



Fig22

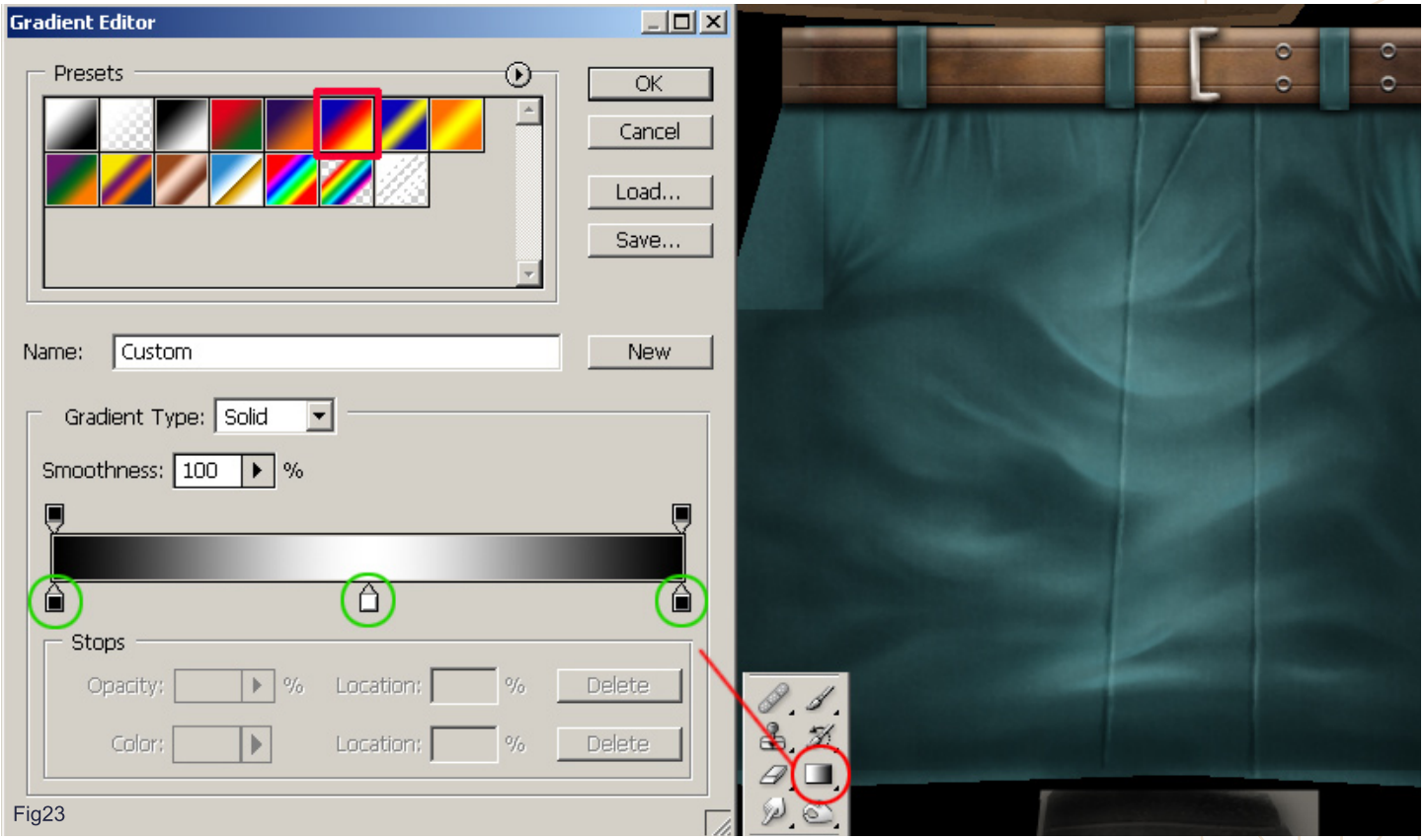


Fig23



23. One final layer, to help provide some subtle shading, can be added on top of the previous three. This will incorporate a Gradient which can be found on the toolbar (seen ringed in red in Fig.23). First of all, create a selection area around the wireframe containing the trousers and then click on the gradient tool. This will open up a dialogue box similar to that on the left. Now select the preset in red along the top of the editor and proceed to click on the three tabs under the gradient bar ringed in green. Change the colours to black, white and black, as shown, and then drag a line from the left of the trousers to the right, making sure that the layer mode is set to 'Multiply'. You should now see a consistent shadow down the edges of the trousers, fading away in the middle, as seen on the right. A similar approach can be used on the waist banner, except that is for the gradient. Begin with some broadly painted shadows using a Soft Round airbrush and then tighten the creases with a smaller Hard Round brush before emphasizing them with a highlights layer.

Conclusion

Once you are satisfied that you have completed each of the components on the texture, you can add a couple of finishing touches if you wish. These incorporate painting in some shadows around the clothing and armour, particularly under the shoulder piece and elbow guard. This will just emphasize the geometry and add a richer and deeper contrast to the shadows when the character is placed in a scene. You will notice that the trousers have not been unwrapped in their entirety and so it will not be possible to place a shadow under the waist belt and banner, as it would be mirrored on both sides. Ideally, you should unwrap both legs in order to solve this problem but, for the sake of saving time, I have neglected to do this. One remaining aspect you can add is some wear and tear to the clothing and armour through dirt maps. Finding a suitable image of rusted metal will provide a good base from which to extract some detail which can be colour adjusted and then overlayed.

You could use a Multiply mode to add dirt/rust, or perhaps Soft Light / Screen to add scratches. Have a go and see what you can come up with. You could also try using Layer Effects – Bevel / Emboss to add dents and create a battle hardened look. This, I hope, covers most of the crucial aspects of the texturing phase of the tutorial. You may find that some of the texture is stretched slightly when applied to the model, as is often the case. An alternative to changing the texture itself is to tweak the mapping within Lightwave to solve the issues, which is usually far quicker. Simply apply an Unwrap UVW and transform the verts, as outlined in the mapping tutorial. When the texture is applied to the mesh and rendered in a simple scene, we end up with something similar to this image.



Texture painted By

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Tutorial By :

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The 'Swordmaster' character was originally created by

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The Swordmaster

Is our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3D applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications. Over the next 8 months we will outline, in detail, the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

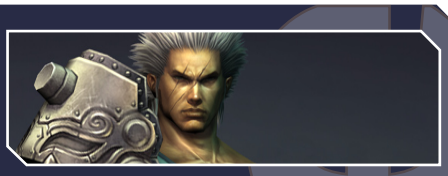
Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

Enjoy ...



Part 8
Texturing Armour and Clothing.

Introduction

We have finally arrived at the end of this series of tutorials. Last month we covered the initial stages of texturing the character by painting in the skin and hair. This month concludes with us adding the clothing and armour. As with the mapping section this is a very detailed and lengthy process and there is simply not time to cover every aspect. Instead, I shall detail some of the key stages which can be applied to numerous areas of the template and hopefully provide a practical overview.

1. The clothing itself is by far the simplest to achieve as this will comprise of only two key layers of detail in the form of shadows and highlights, much like the skin previously. As such, we will start with the armour as this is a little more involved. We will begin with the elbow pad as this is a relatively small part of the armour but one that utilises most of the techniques we shall use on the more dominant pieces. First of all, select a neutral grey and block in the area on the template and then, using the elliptical marquee tool, select a small area within the curved section. Now, on the main menu bar, click on Layer – Layer Style – Bevel and Emboss. Alternatively, you can click on the small "f" icon at the base of the Layers palette. This will bring up a dialogue box, similar to Fig.01. Here you can alter various settings that will determine the direction of light along with the type and depth of bevel. You will notice that I have chosen an Emboss and the angle of light is directly above in this case. This is because the orientation of the detail on the texture map is such that the top of the ellipse will be facing upwards on the character and hence the shadow will be underneath. Experiment with the slider bars and styles and observe the effects.

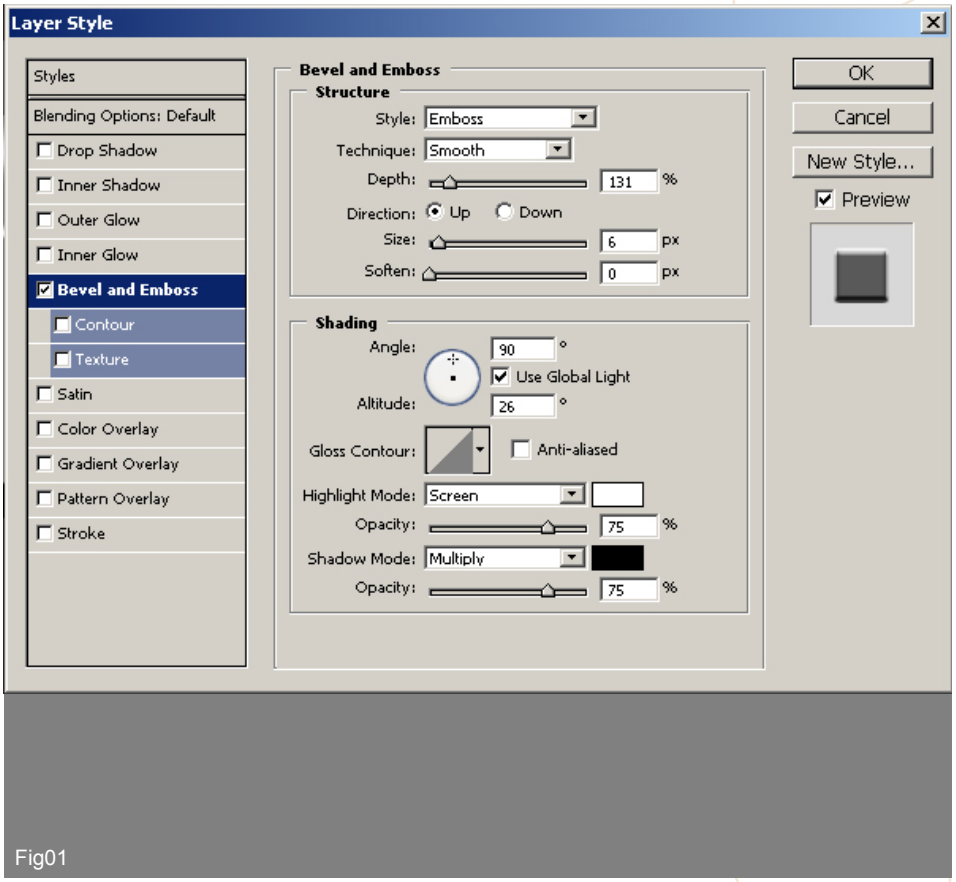


Fig01

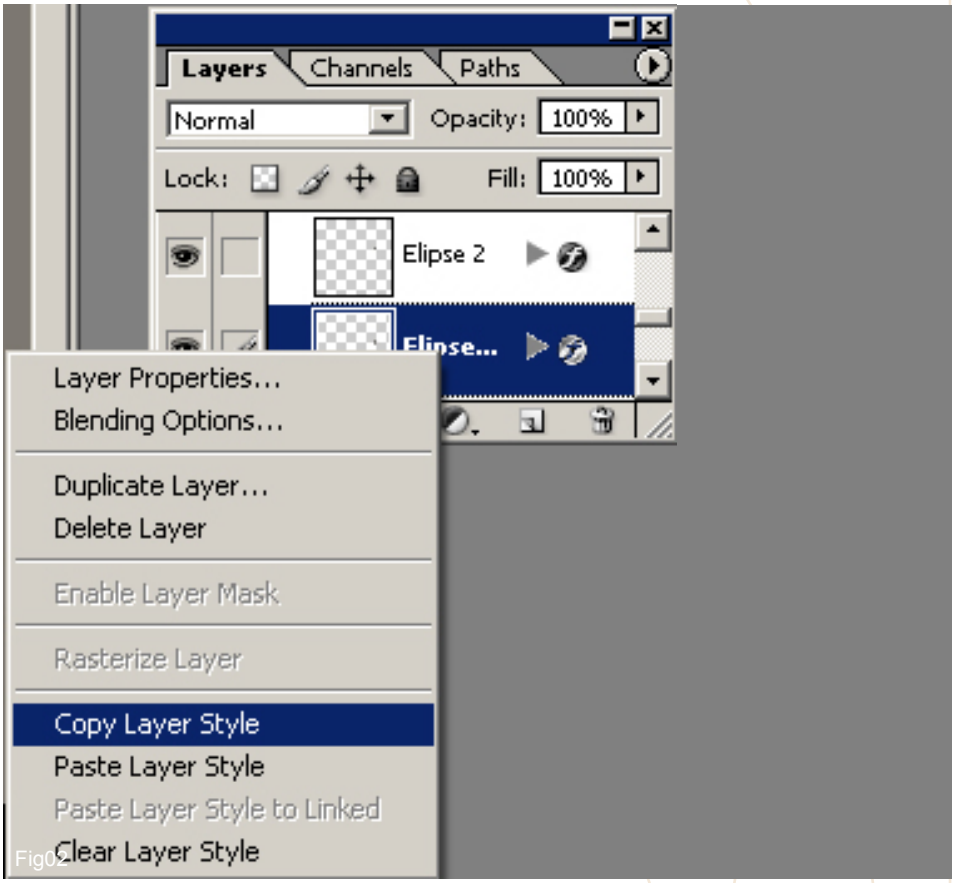
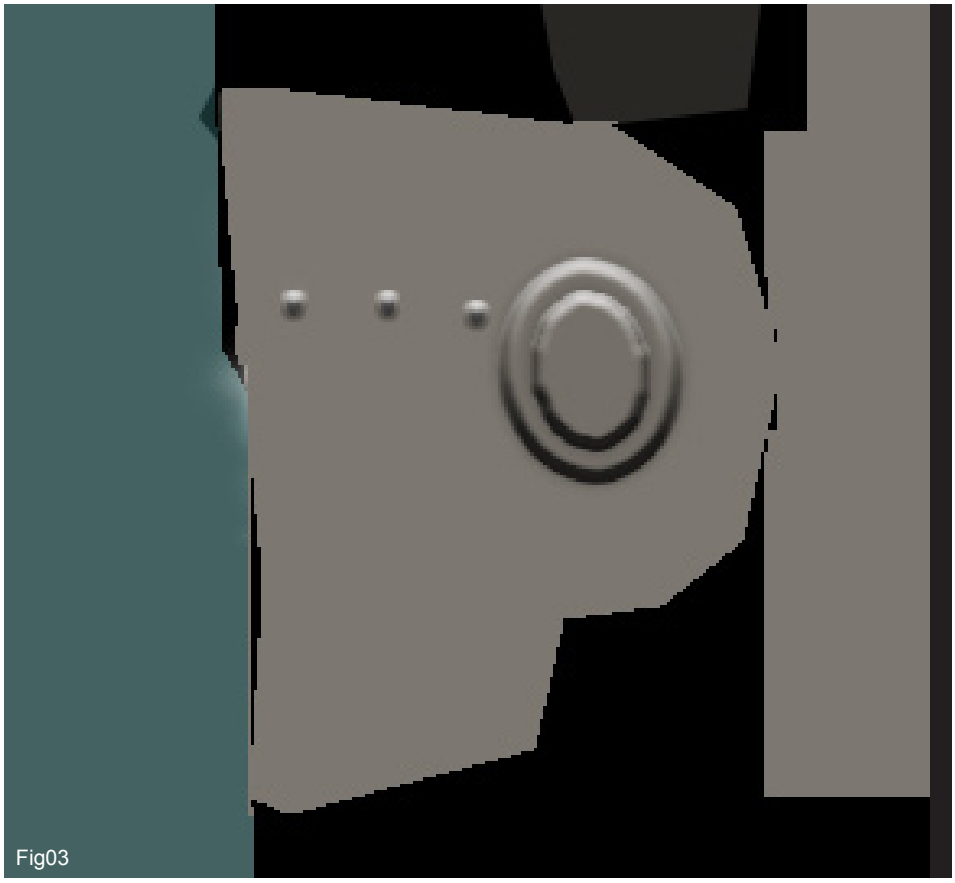
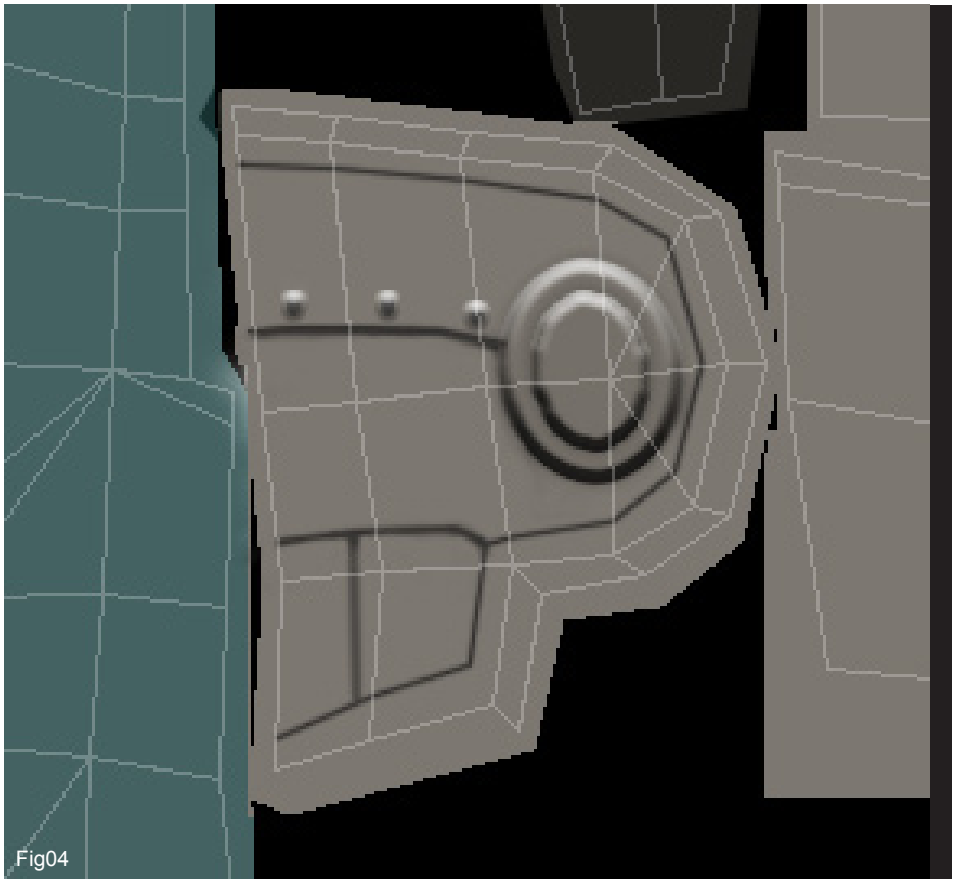


Fig02

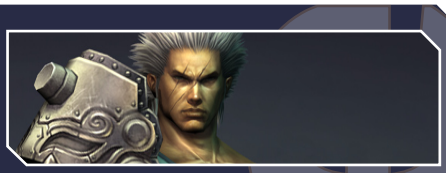

Fig03

2. One more thing which will help is to add a subtle Drop Shadow, which you can find at the top of the list. Check the tick box and then slide the Distance arrow down to zero and increase the Size and Spread until there is a soft shadow around the ellipse. Now, on a new layer, create a smaller ellipse inside this one and fill it with the same grey colour. Right-click on the ellipse 1 layer and select Copy Layer Style and then paste this into the new layer, as shown in Fig.02. You will now have two ellipses that both incorporate an emboss and drop shadow.

3. On another new layer, add in some rivet heads using the same technique but perhaps leaving out the drop shadow (Fig.03).


Fig04

4. Now add one more layer and start to draw in some outlines that will trace the shape of the elbow pad and create some extra detail, as seen in Fig.04.



5. Now, believe it or not, that is essentially the structure of our elbow pad. It doesn't look finished yet but with a few minor tweaks it will be. As this is a relatively small area on the template we are going to apply our final adjustments on the main colour block layer, as opposed to adding any further layers. You can either use the Colour Dodge / Burn tools or choose lighter and darker shades of grey to do this - both methods will require some painting by hand. We are aiming for something similar to Fig.05, in which you can see some modulation to help emphasize the grooves and curvature of the metal. Already we can see an improvement, but one final layer will create the finishing touch.

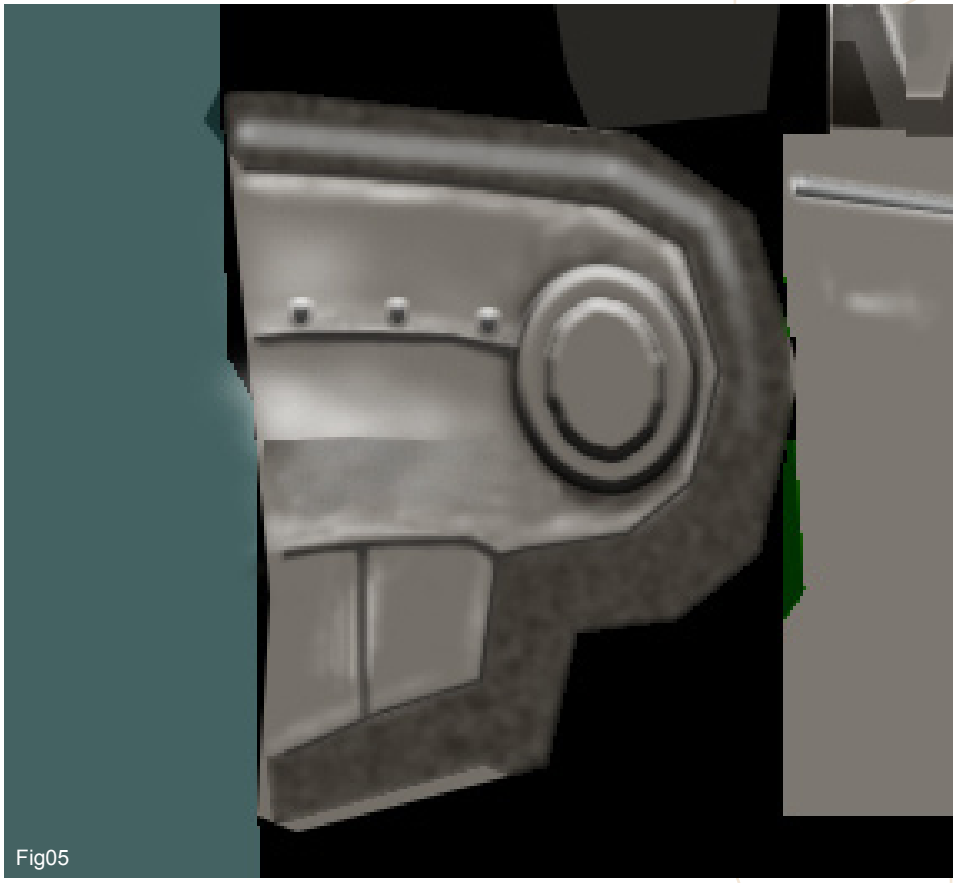


Fig05

6. This will be a metal overlay which shall eventually be used on all of the armour and so must be near the top of our layer stack. Choose any photo of metal that demonstrates the right kind of scale and then set it to 'multiply' and lay it over the top, making any colour / tonal adjustments as required (Fig.06). This then describes the general process we will apply to all of the armour sections, no matter how complex. Use the marquee / selection tools to add shapes followed by Layer Effects to add in detail and lighting. Then, either on a new layer or on the base colour, paint in the refinements, such as shading and highlighted edges etc. You can then clone parts of the metal overlay onto the designated area to complete the armour. Remember to use a guidelines layer initially, as we did with the skin section, to check the integrity of your mapping - no point in spending half an hour painting an area of detail only to find it is not correct on the model!

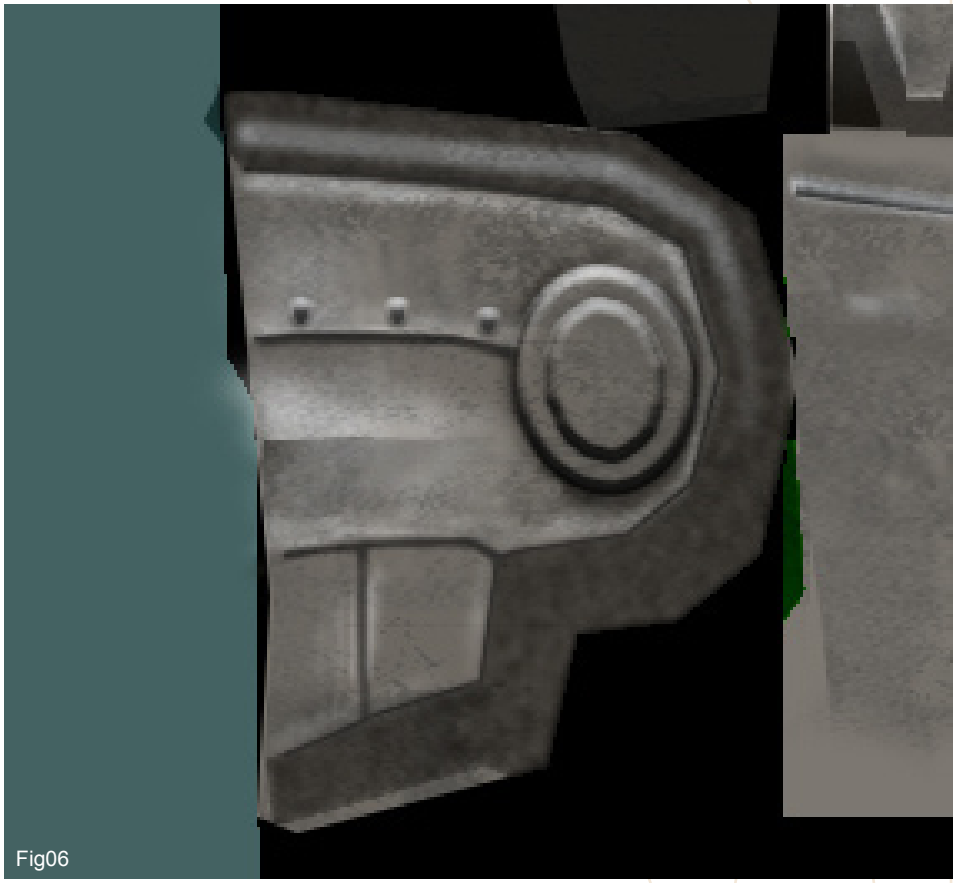


Fig06

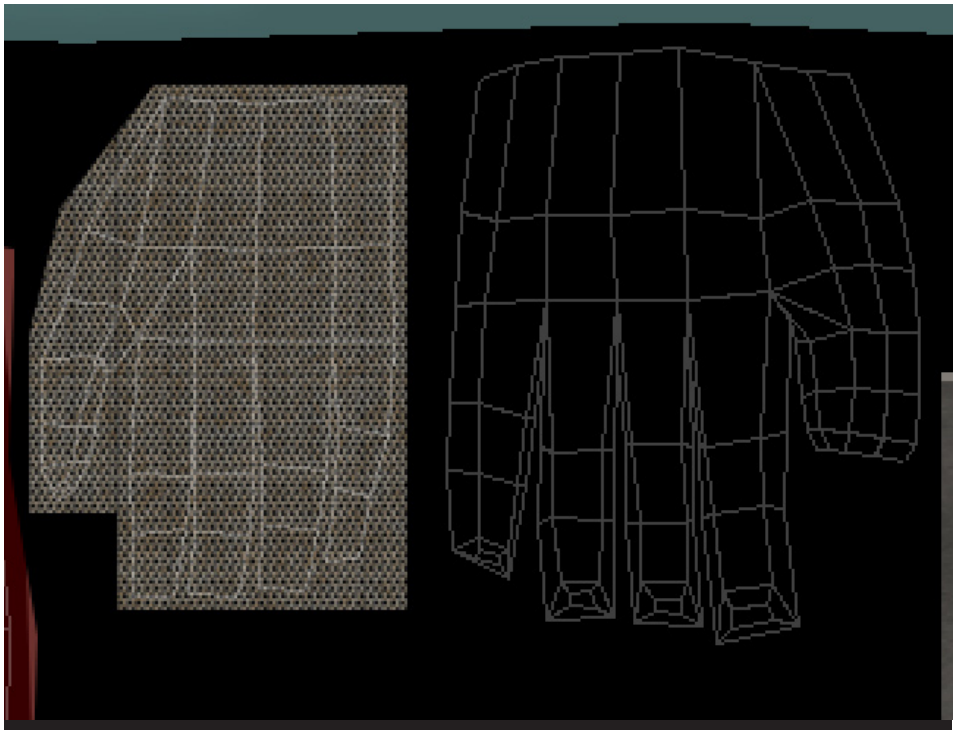


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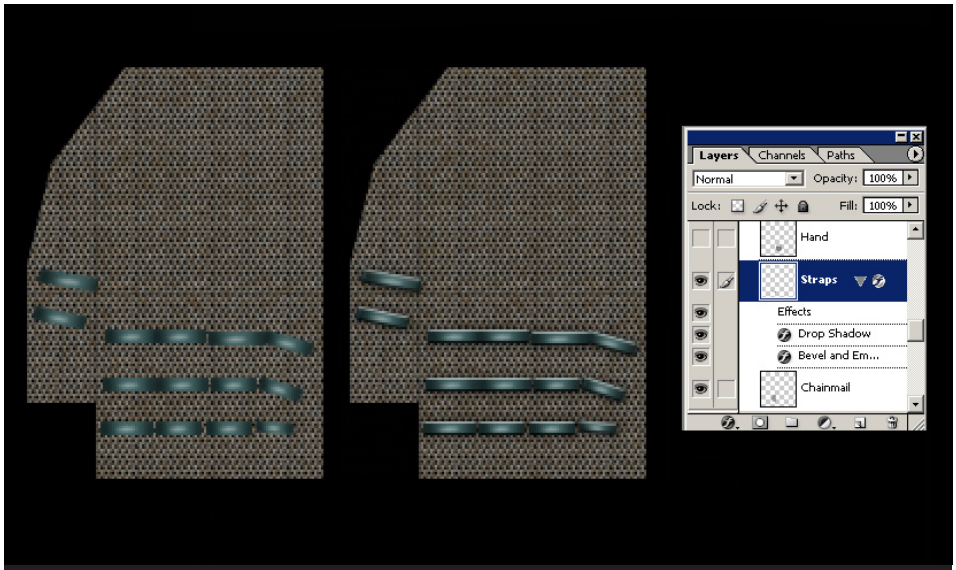
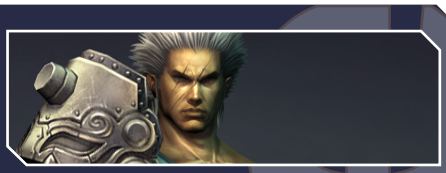


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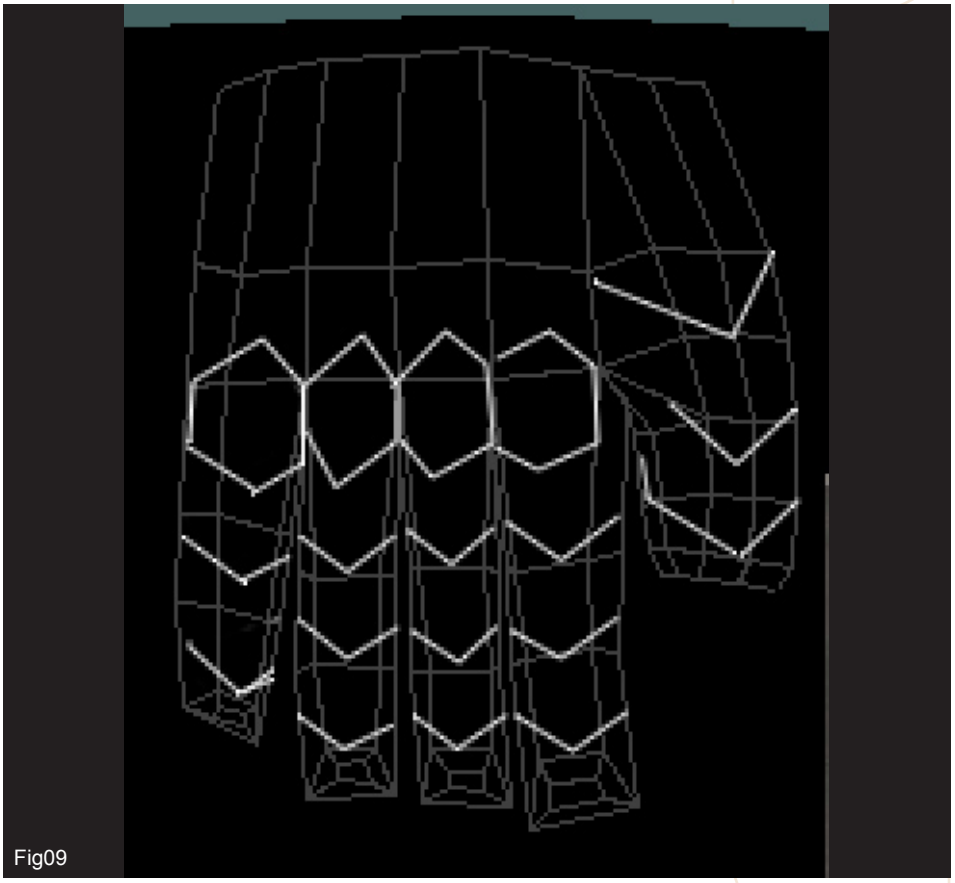


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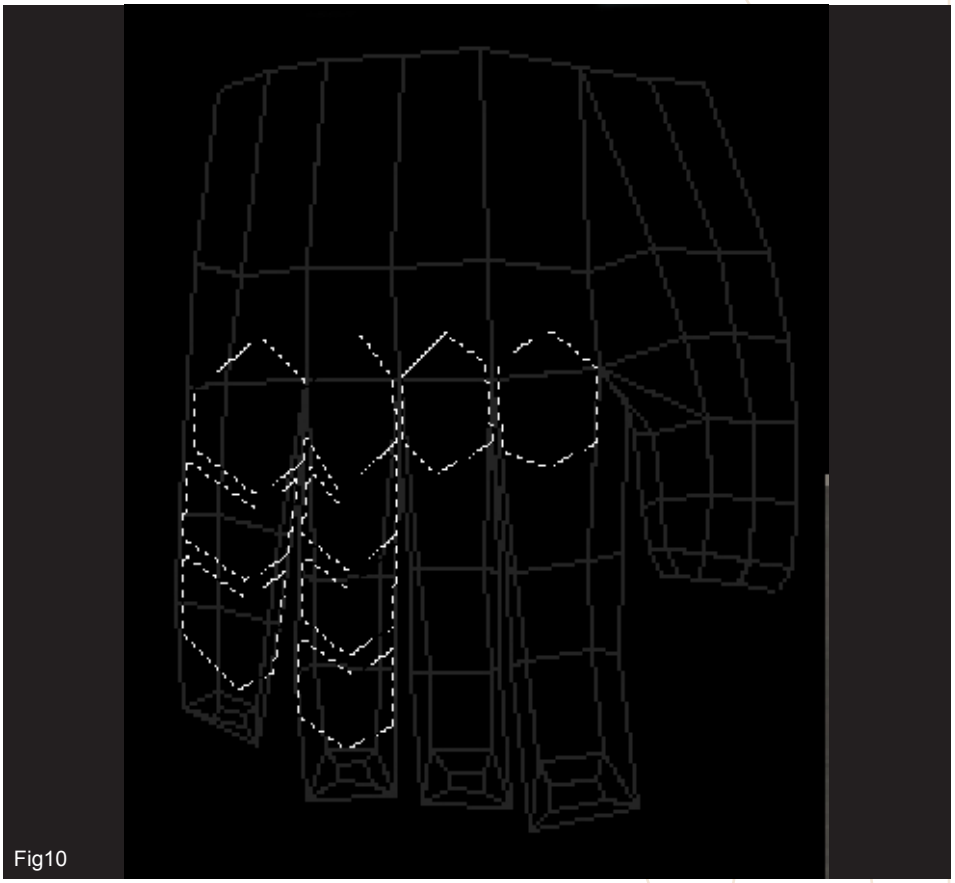


Fig10

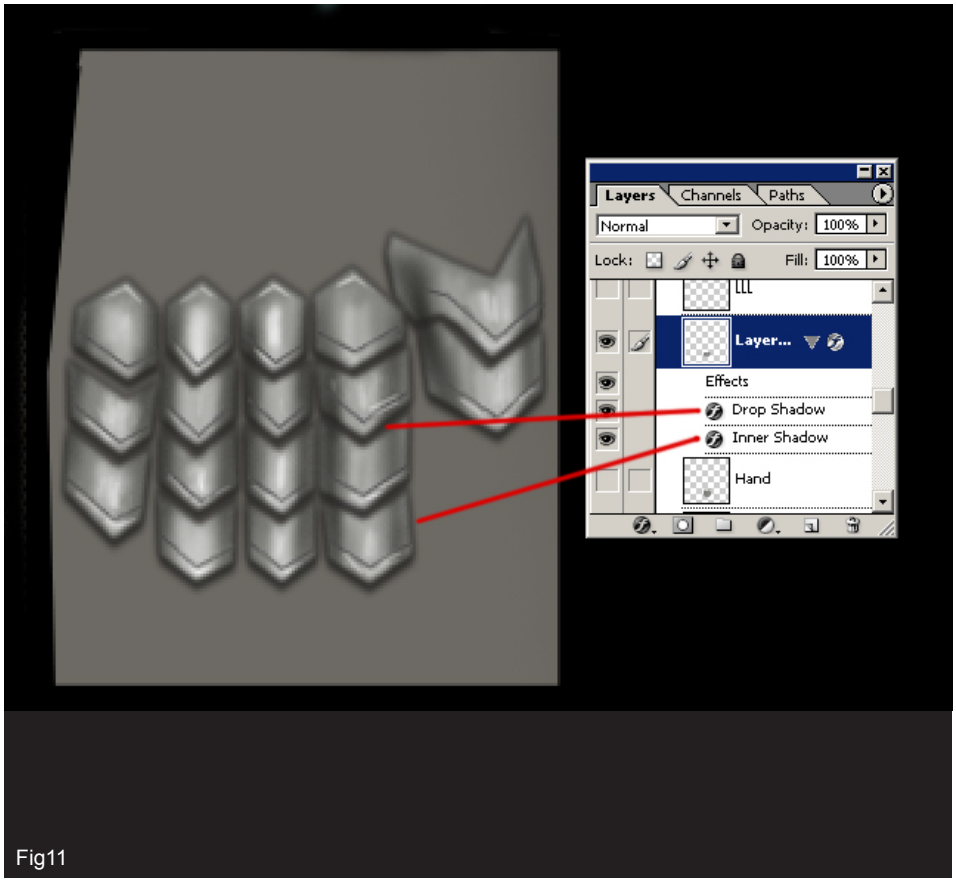


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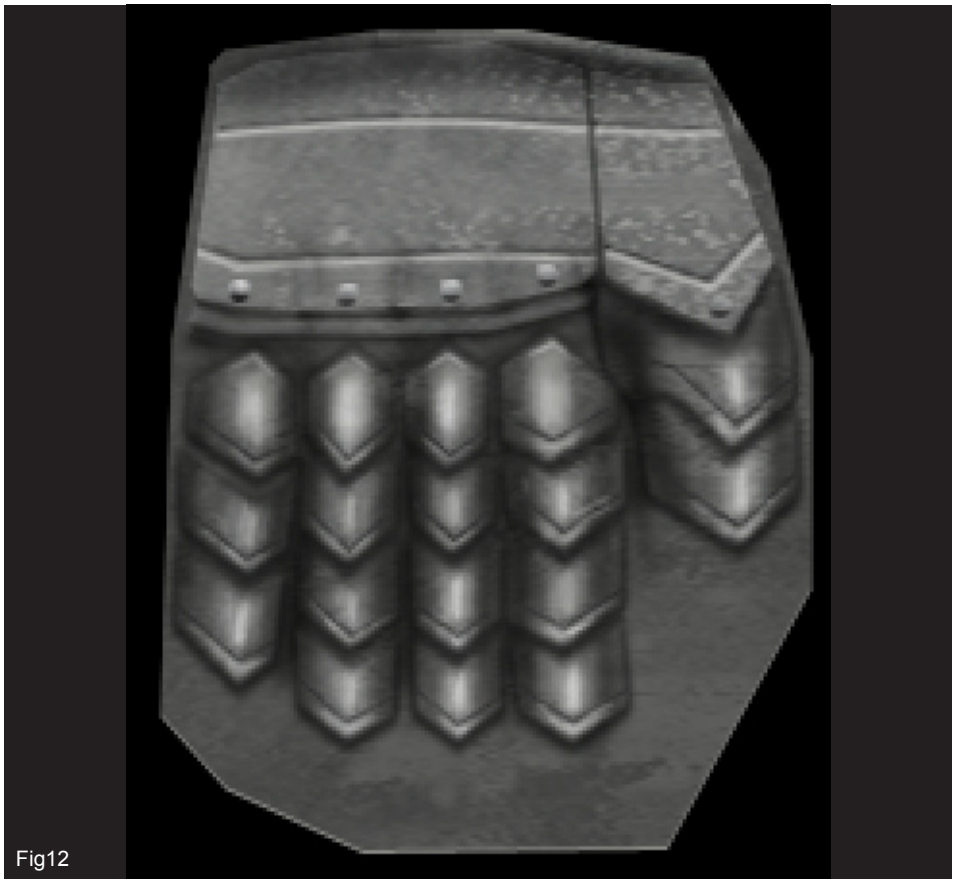
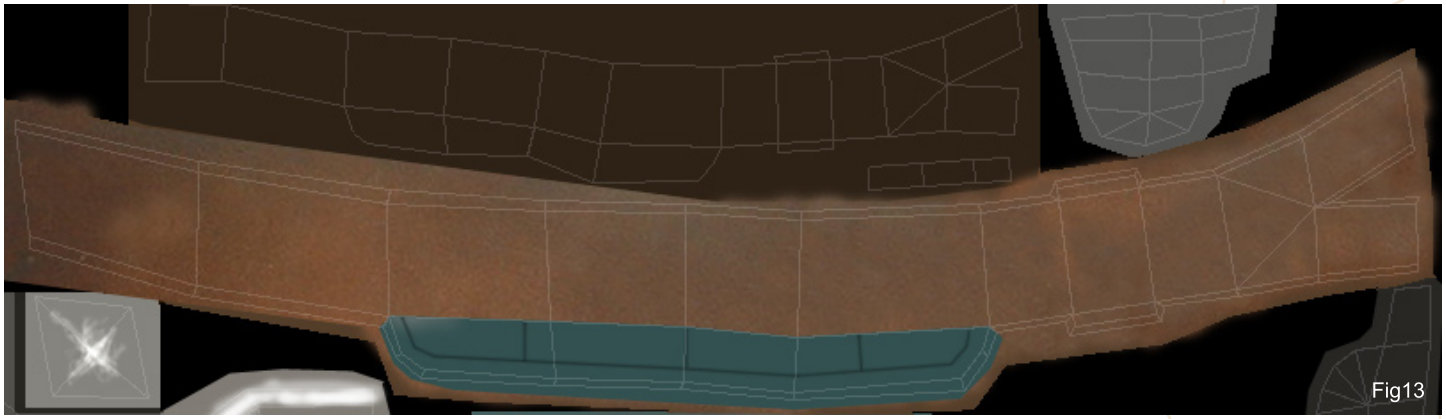


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Fig14

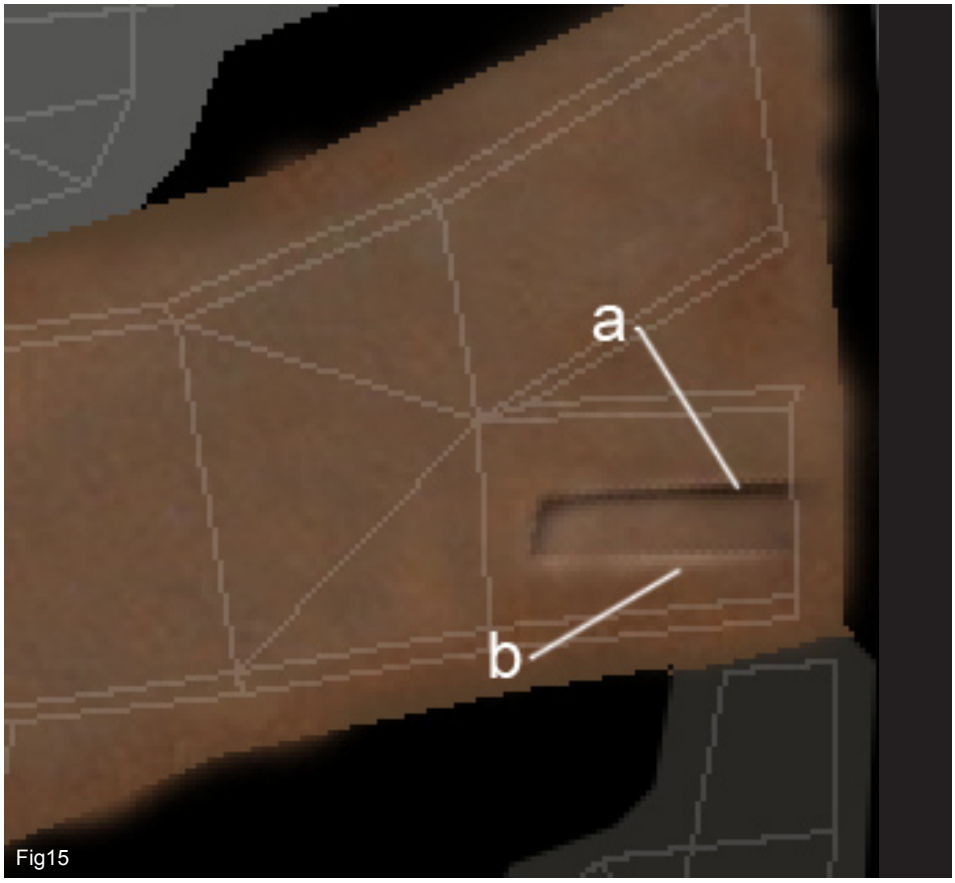
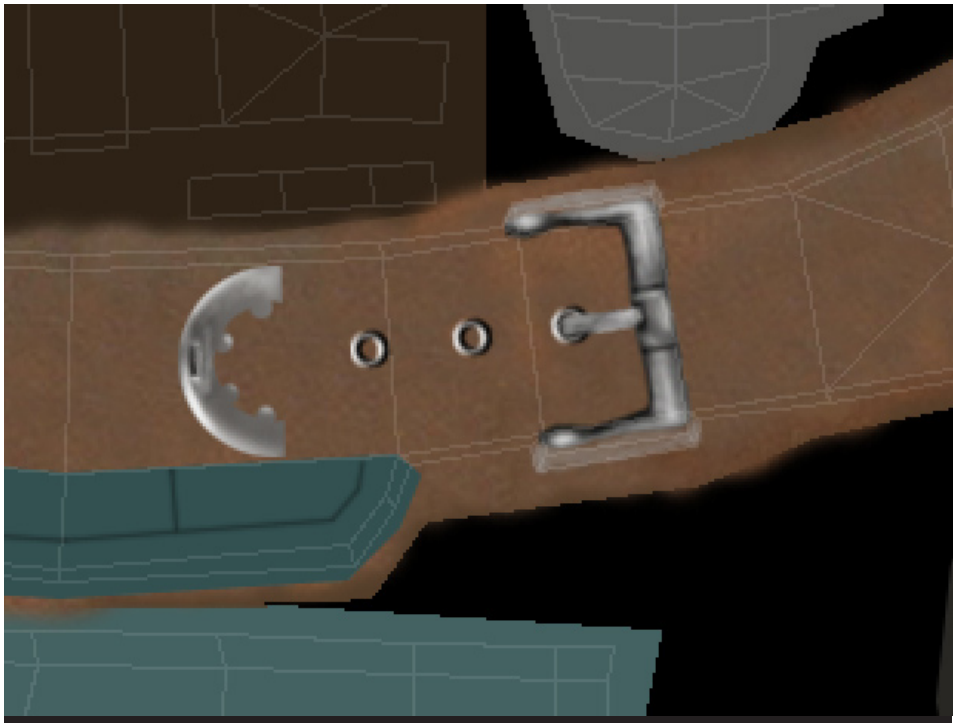
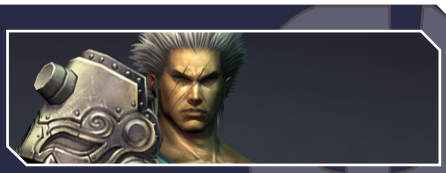


Fig15

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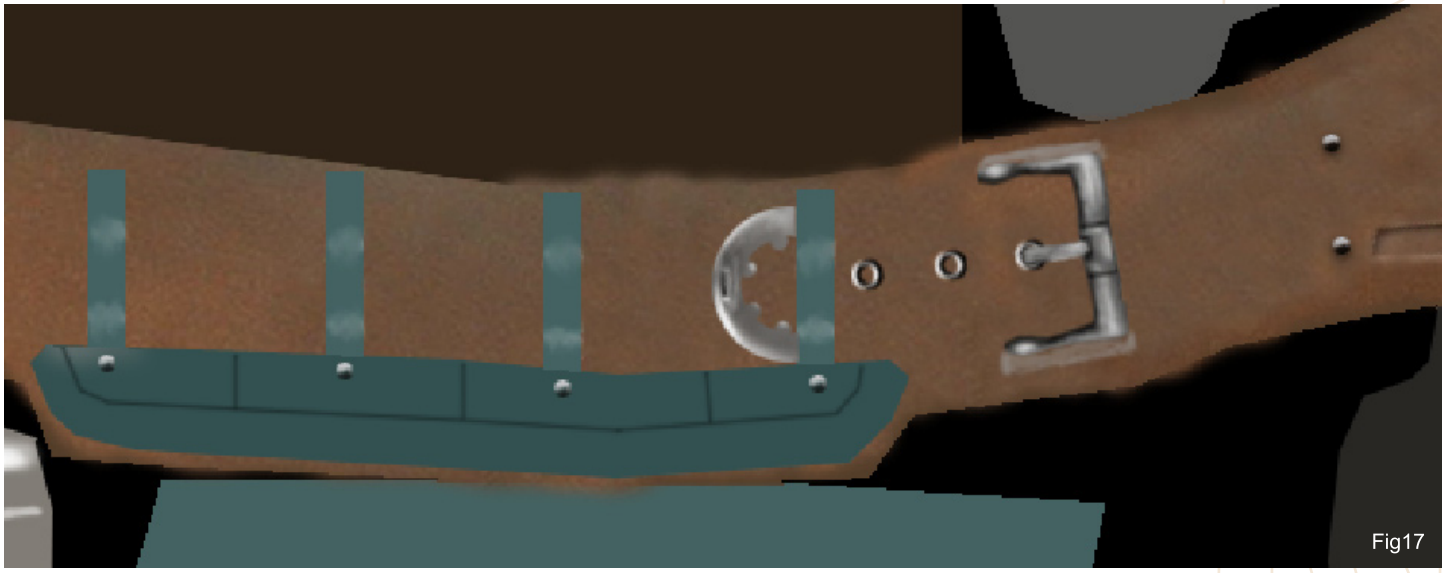


Fig17

17. The next stage involves adding in rivets and a few vertical straps, as shown in Fig.17. You can see that I have also painted in highlights across the middle of the straps.

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Fig18

Fig19

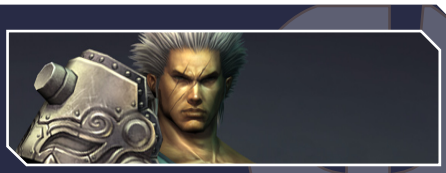




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20. So far we have dealt with techniques used to paint the metal armour and leather belts, but one area yet to be covered is that of cloth. This will feature on the trousers, as well as the banner hanging from his waist. The first step is - yes, you guessed it - block in the base colour, as seen in Fig.20, along with two seam lines.



21. Now using a shadows layer set to Multiply, start painting in the direction of some of the folds, using the same colour as the trousers. Using a standard soft round airbrush they will naturally come out darker, due to the layer blending mode. Use a larger brush to begin with to get a soft edge and then reduce the size of the brush to sharpen crease lines. In Fig.21, you can see the arrows which dictate the direction of the creasing. Try and vary it slightly as there is always variety where folds are concerned.



Fig21

22. Now on the highlights layer (Set to Soft Light), simply trace around the shadows to emphasize them as well as placing a few strokes in between, as shown by the arrows in Fig.22. Bear in mind which areas will receive more direct light (in this case the outside of the leg) and focus the stronger highlights in this area. Use a colour that is almost white, but with a shade of the green, in the trousers, which will help. Use a small, soft brush to add crisp edges to some of the more extreme creasing down the outside of the leg. Generally, creases appear more around areas of tension such as joints - hence the detail around the groin, so keep this in mind.



Fig22

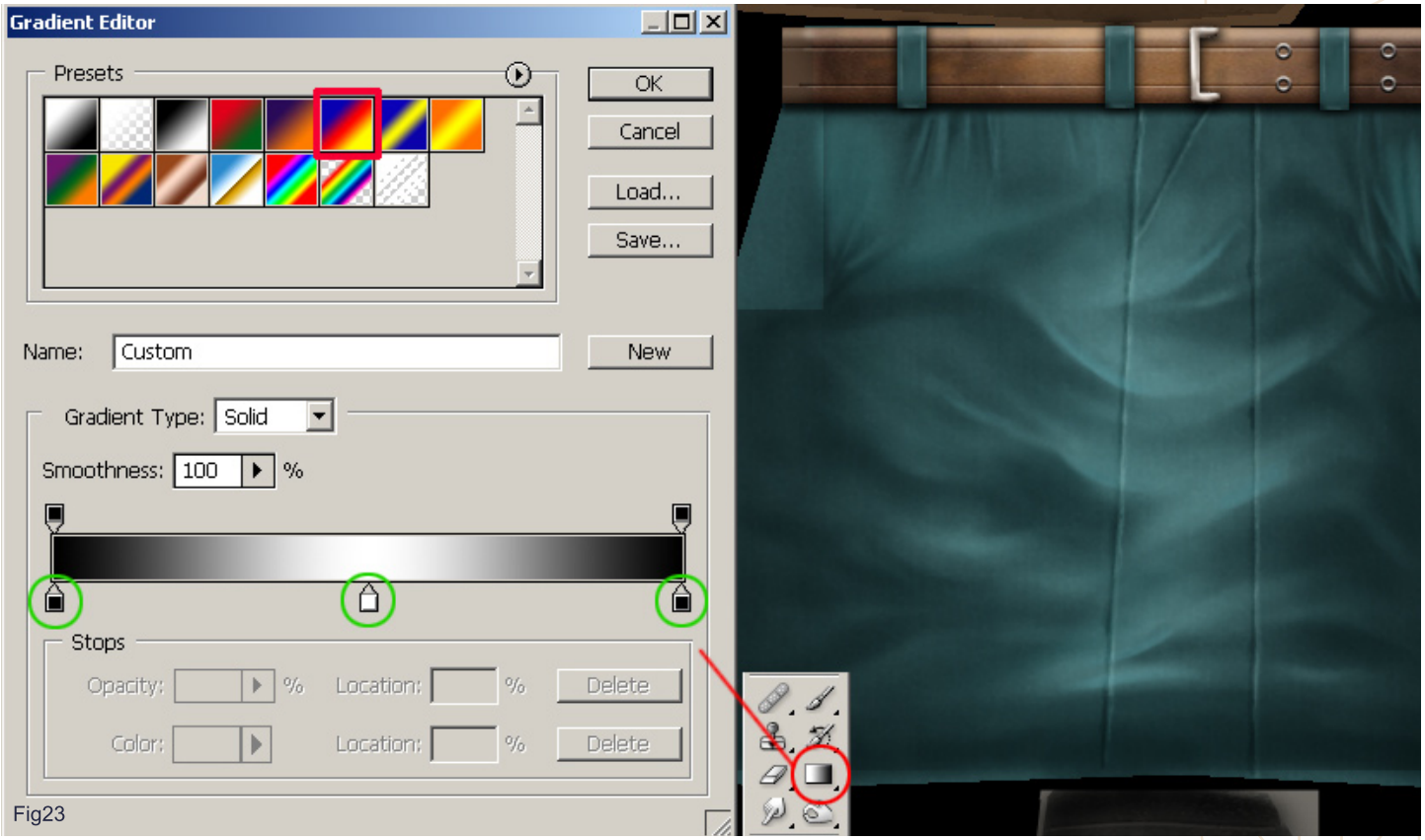


Fig23



23. One final layer to help provide some subtle shading can be added on top of the previous three. This will incorporate a Gradient which can be found on the toolbar (seen ringed in red in Fig.23). First of all, create a selection area around the wireframe containing the trousers and then click on the gradient tool. This will open up a dialogue box, similar to that on the left. Now select the preset in red along the top of the editor and proceed to click on the three tabs under the gradient bar ringed in green. Change the colours to black, white and black, as shown, and then drag a line from the left of the trousers to the right, making sure that the layer mode is set to 'Multiply'. You should now see a consistent shadow down the edges of the trousers fading away in the middle, as seen on the right. A similar approach can be used on the waist banner, except that is for the gradient. Begin with some broadly painted shadows using a Soft Round airbrush and then tighten the creases with a smaller Hard Round brush, before emphasizing them with a highlights layer.

Conclusion

Once you are satisfied that you have completed each of the components on the texture you can add a couple of finishing touches if you wish. These incorporate painting in some shadows around the clothing and armour, particularly under the shoulder piece and elbow guard. This will just emphasize the geometry and add a richer and deeper contrast to the shadows when the character is placed in a scene. You will notice that the trousers have not been unwrapped in their entirety and so it will not be possible to place a shadow under the waist belt and banner, as it would be mirrored on both sides. Ideally, you should unwrap both legs in order to solve this problem but, for the sake of saving time, I have neglected to do this. One remaining aspect you can add is some wear and tear to the clothing and armour through dirt maps. Finding a suitable image of rusted metal will provide a good base from which to extract some detail which can be colour adjusted and then overlayed.

You could use a Multiply mode to add dirt / rust or perhaps Soft Light / Screen to add scratches. Have a go and see what you can come up with. You could also try using Layer Effects – Bevel / Emboss to add dents and create a battle hardened look. This I hope covers most of the crucial aspects of the texturing phase of the tutorial. You may find that some of the texture is stretched slightly when applied to the model, as is often the case. An alternative to changing the texture itself is to tweak the mapping within Maya to solve the issues, which is usually far quicker. Simply apply an Unwrap UVW and transform the verts as outlined in the mapping tutorial. When the texture is applied to the mesh and rendered in a simple scene we end up with something similar to this image.



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The Swordmaster

SOFTIMAGE|XSI

Is our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3D applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications. Over the next 8 months we will outline, in detail, the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

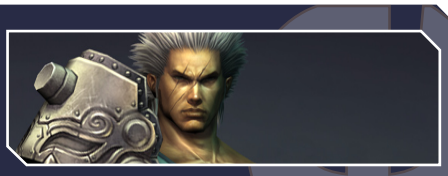
Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

Enjoy ...



Part 8
Texturing Armour and Clothing.

Introduction

We have finally arrived at the end of this series of tutorials. Last month we covered the initial stages of texturing the character by painting in the skin and hair. This month concludes with us adding the clothing and armour. As with the mapping section this is a very detailed and lengthy process and there is simply not time to cover every aspect. Instead, I shall detail some of the key stages which can be applied to numerous areas of the template and hopefully provide a practical overview.

1. The clothing itself is by far the simplest to achieve as this will comprise of only two key layers of detail in the form of shadows and highlights, much like the skin previously. As such, we will start with the armour as this is a little more involved. We will begin with the elbow pad as this is a relatively small part of the armour but one that utilises most of the techniques we shall use on the more dominant pieces. First of all, select a neutral grey and block in the area on the template and then, using the elliptical marquee tool, select a small area within the curved section. Now on the main menu bar, click on Layer – Layer Style – Bevel and Emboss. Alternatively, you can click on the small "f" icon at the base of the Layers palette. This will bring up a dialogue box, similar to Fig.01. Here you can alter various settings that will determine the direction of light along with the type and depth of bevel. You will notice that I have chosen an Emboss and the angle of light is directly above in this case. This is because the orientation of the detail on the texture map is such that the top of the ellipse will be facing upwards on the character and hence the shadow will be underneath. Experiment with the slider bars and styles and observe the effects.

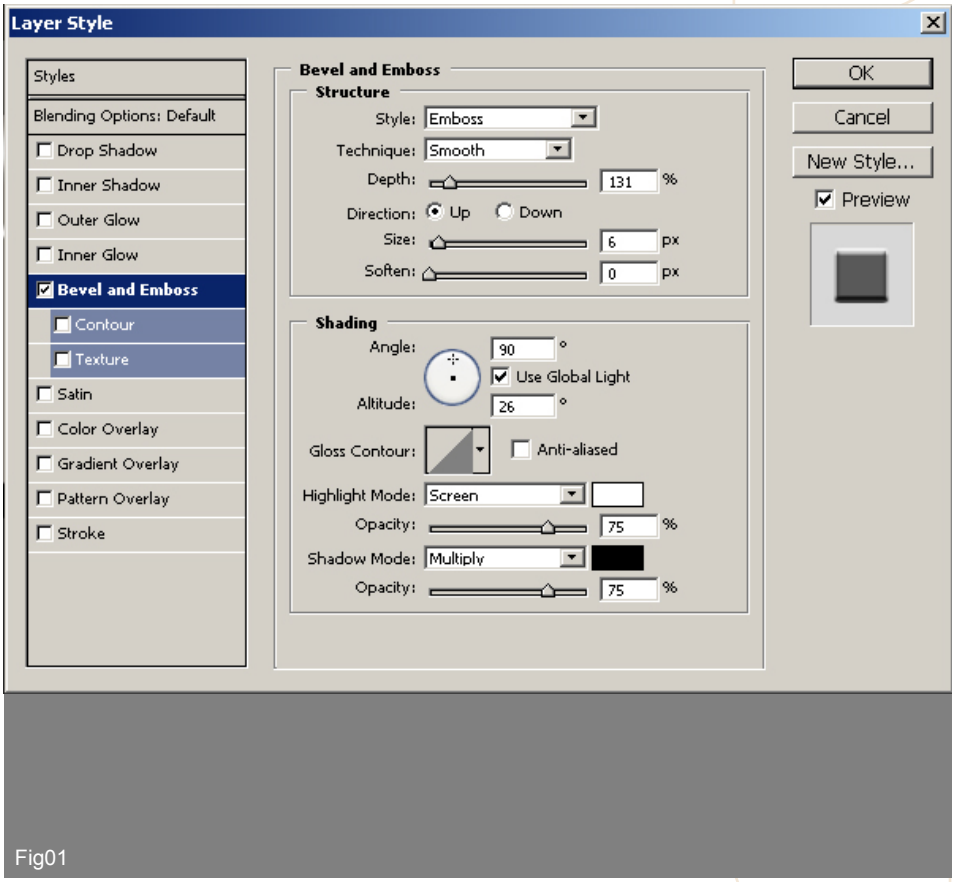


Fig01

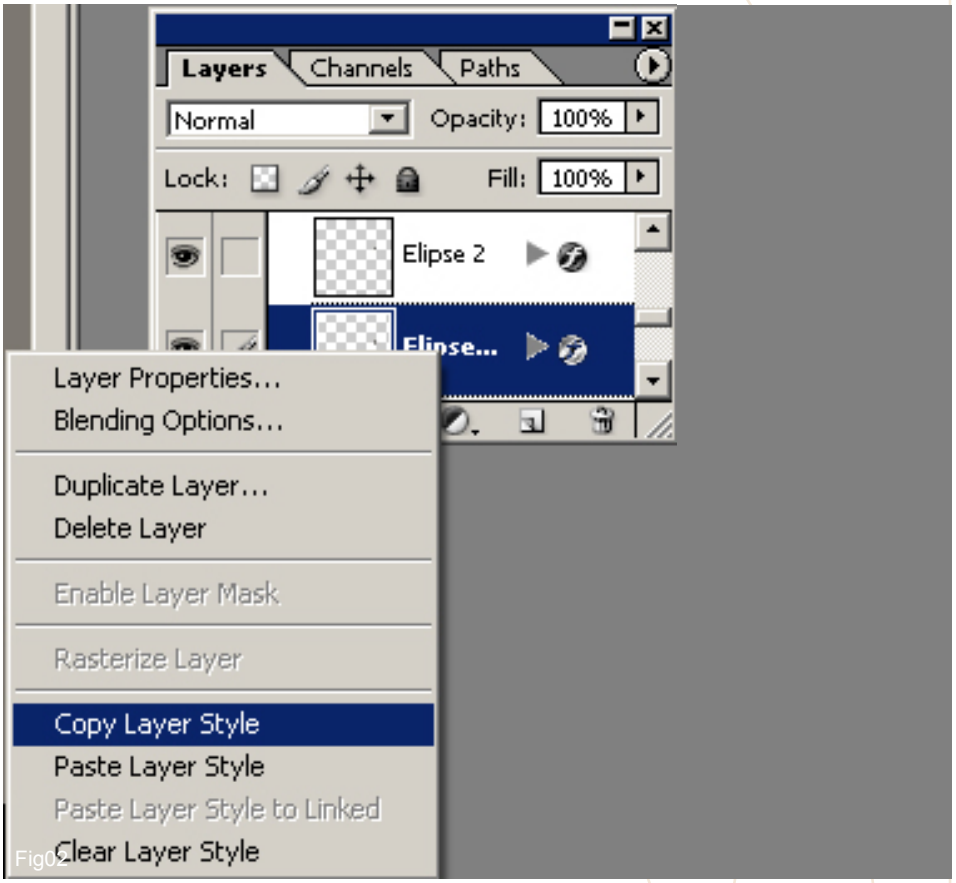
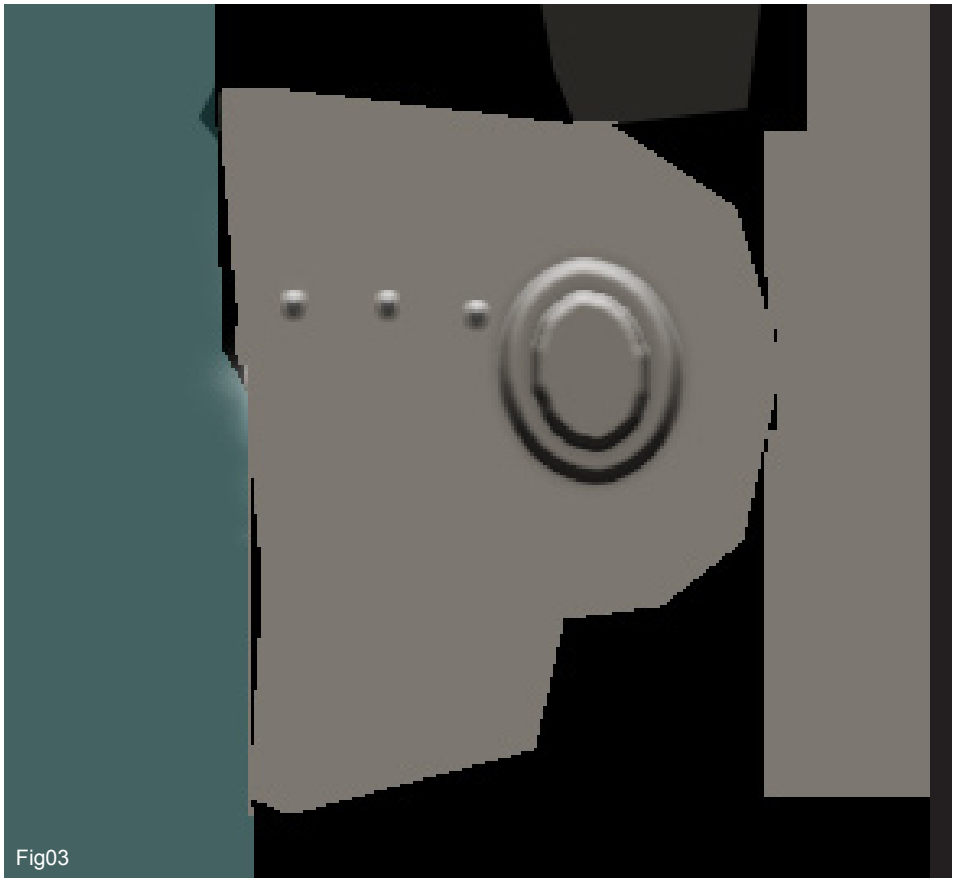
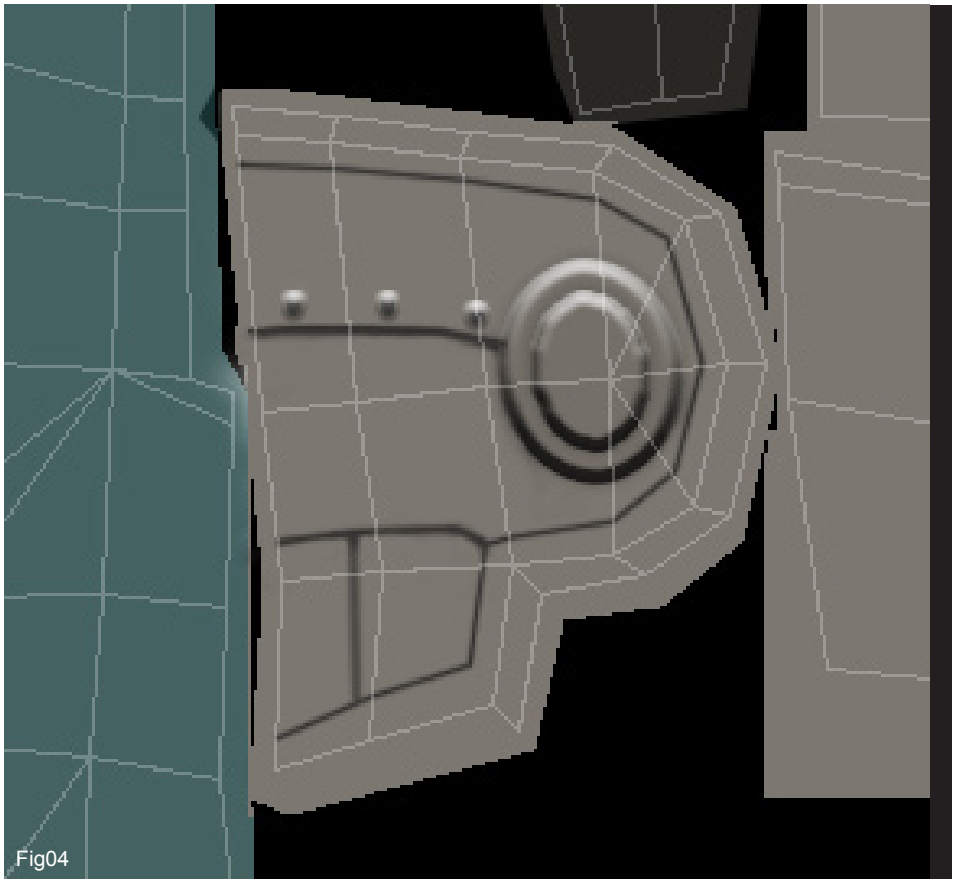


Fig02

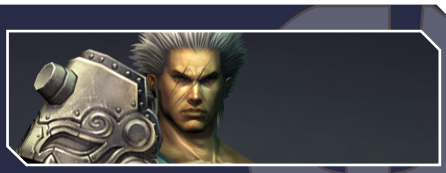

Fig03

2. One more thing which will help is to add a subtle Drop Shadow, which you can find at the top of the list. Check the tick box and then slide the Distance arrow down to zero and increase the Size and Spread until there is a soft shadow around the ellipse. Now on a new layer, create a smaller ellipse inside this one and fill it with the same grey colour. Right-click on the ellipse 1 layer and select Copy Layer Style and then paste this into the new layer, as shown in Fig.02. You will now have two ellipses that both incorporate an emboss and drop shadow.

3. On another new layer, add in some rivet heads using the same technique but perhaps leaving out the drop shadow (Fig.03).


Fig04

4. Now add one more layer and start to draw in some outlines that will trace the shape of the elbow pad and create some extra detail, as seen in Fig.04.



5. Now, believe it or not, that is essentially the structure of our elbow pad. It doesn't look finished yet but with a few minor tweaks it will be. As this is a relatively small area on the template we are going to apply our final adjustments on the main colour block layer, as opposed to adding any further layers. You can either use the Colour Dodge / Burn tools or choose lighter and darker shades of grey to do this - both methods will require some painting by hand. We are aiming for something similar to Fig.05, in which you can see some modulation to help emphasize the grooves and curvature of the metal. Already we can see an improvement but one final layer will create the finishing touch.

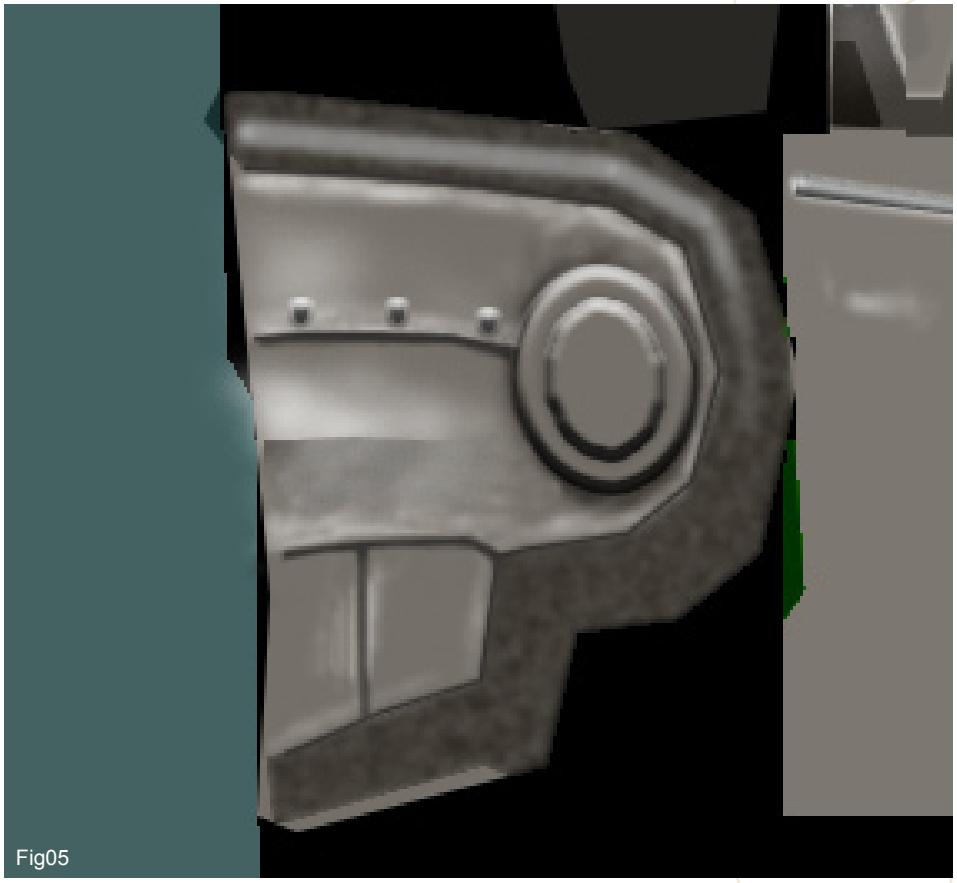


Fig05

6. This will be a metal overlay which shall eventually be used on all of the armour and so must be near the top of our layer stack. Choose any photo of metal that demonstrates the right kind of scale and then set it to 'multiply' and lay it over the top making any colour / tonal adjustments as required (Fig.06). This then describes the general process we will apply to all of the armour sections, no matter how complex. Use the marquee / selection tools to add shapes, followed by Layer Effects to add in detail and lighting. Then, either on a new layer or on the base colour, paint in the refinements, such as shading and highlighted edges etc. You can then clone parts of the metal overlay onto the designated area to complete the armour. Remember to use a guidelines layer initially, as we did with the skin section, to check the integrity of your mapping – no point in spending half an hour painting an area of detail only to find it is not correct on the model!

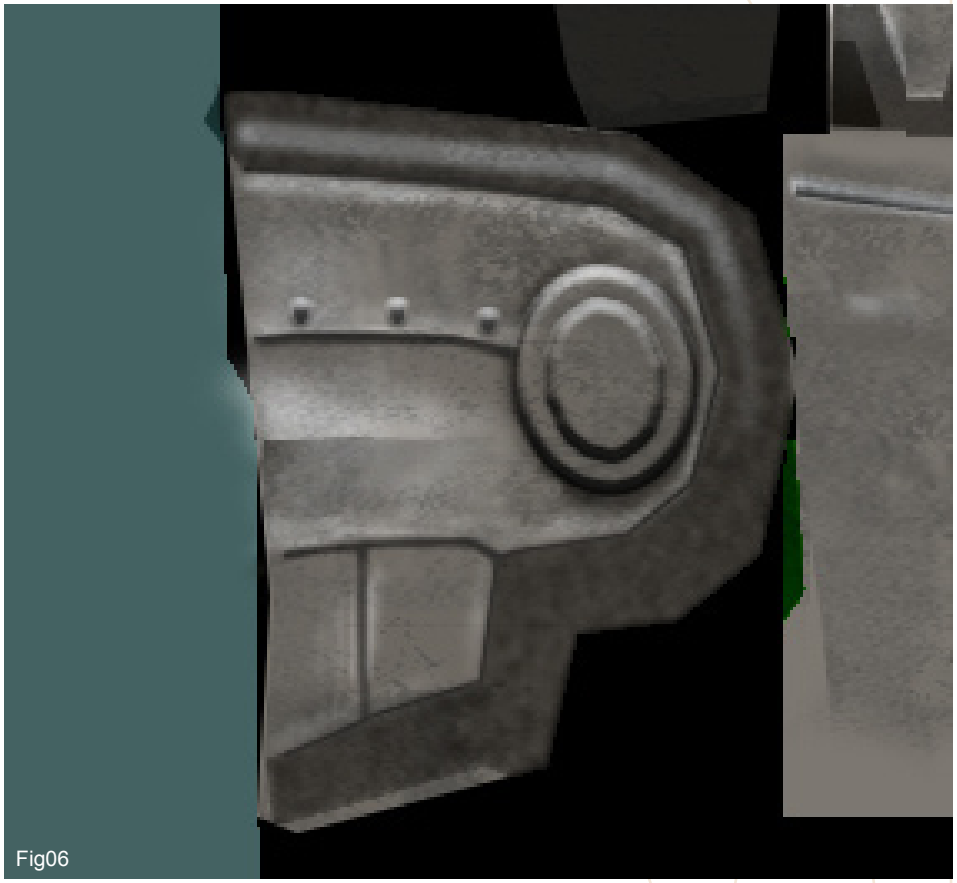


Fig06

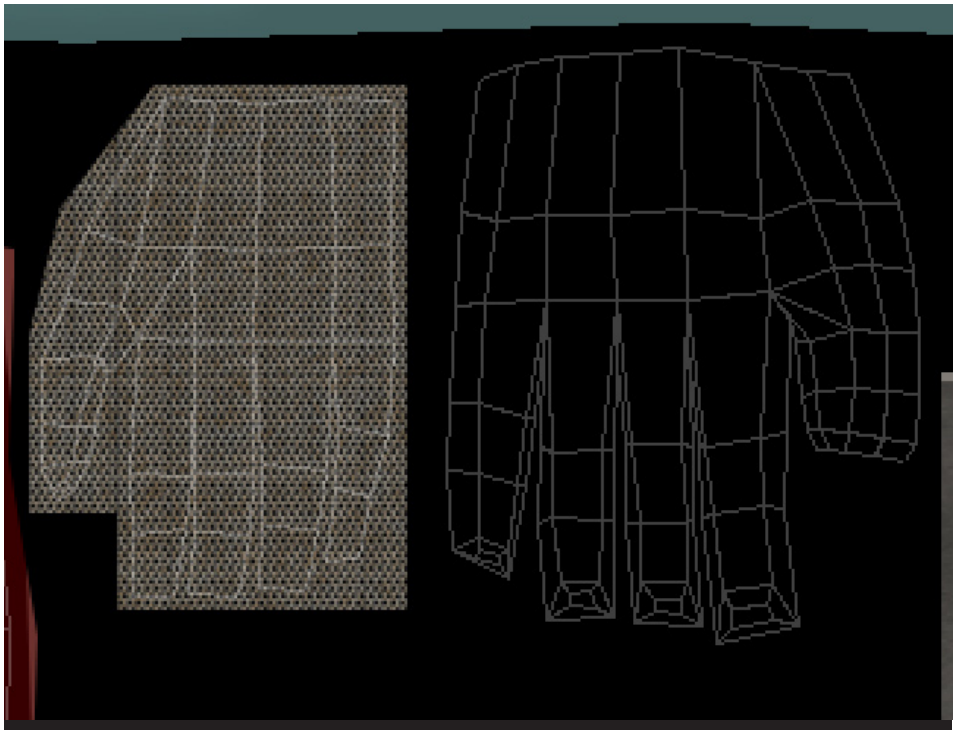


Fig07

7. Now on to the hand - a quite small but highly detailed area. The first step is to find a suitable image of chainmail which can then be copied into our template and scaled to a sufficient size, as seen in Fig.07, to form the palm.

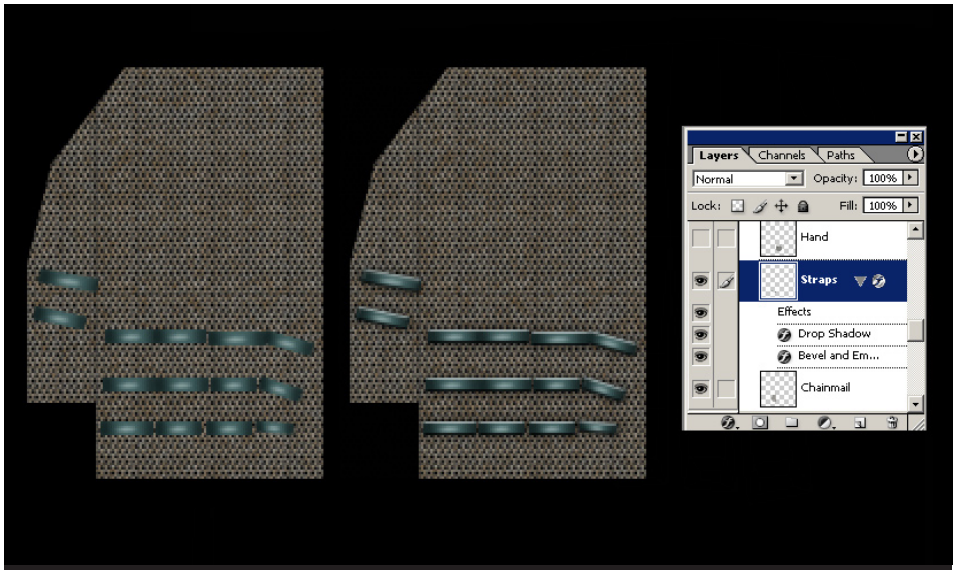
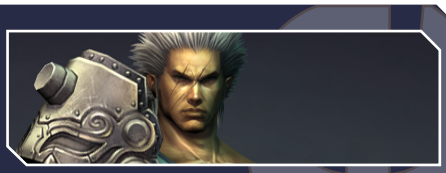


Fig08

8. Now add a series of straps across the fingers with a slight shadow at the edges and a small highlight in the centre, as seen on the left in Fig.08. Next step is to add two layer effects, seen on the right in the layers palette, which will help define them further.



9. The top of the hand, which shall be armour-plated, will be a little more intricate. First of all, use the guidelines layer as a gauge by drawing in the outlines of the metal plates, as seen in Fig.09.

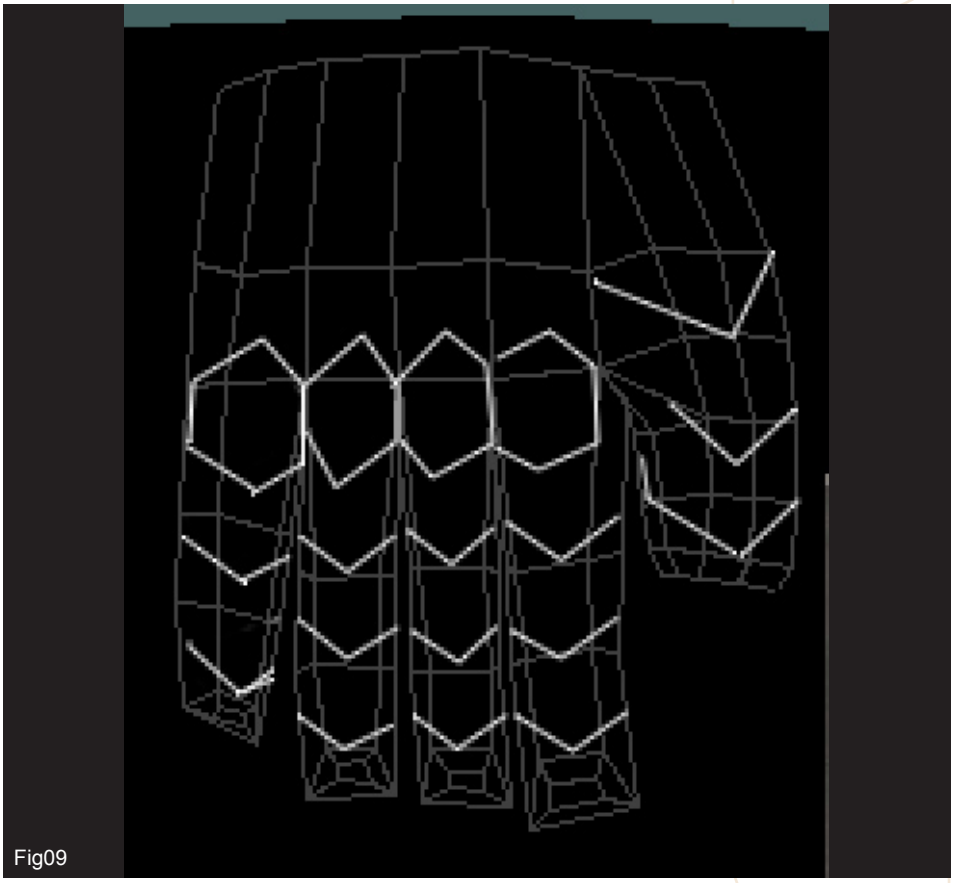


Fig09

10. Now make separate selection groups around the guidelines so you end up with a series of shapes, as seen in Fig.10. Afterwards, you can fill in with a flat grey colour, consistent with the rest of the texture, and when you apply the layer effects they will occur on each piece.

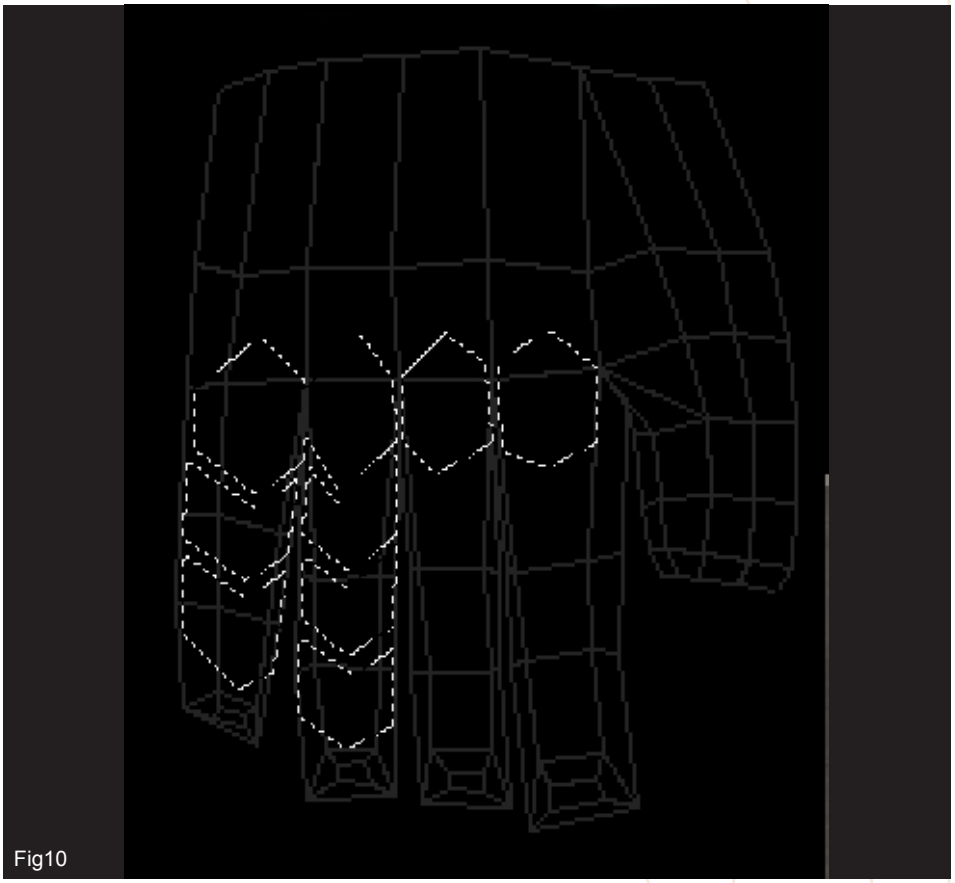


Fig10

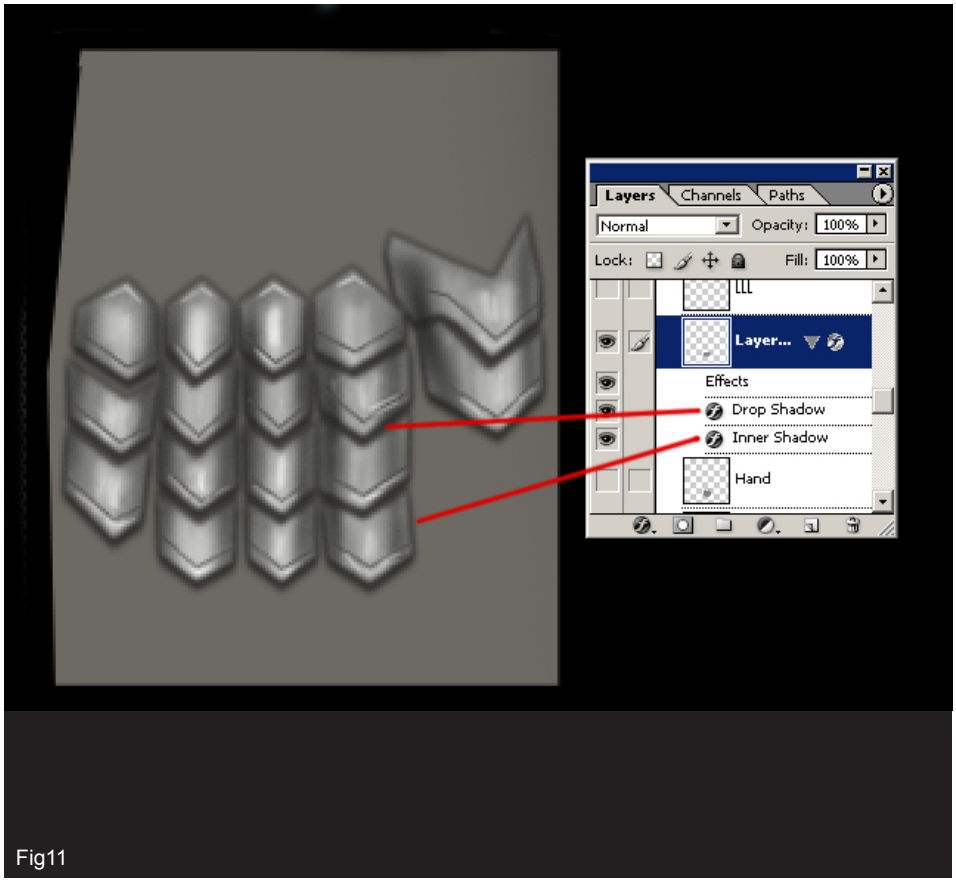


Fig11

11. In Fig.11, you can see the effects of the two layer styles that have been applied; the inner shadow which provides a dark outline and the drop shadow which is below each piece.

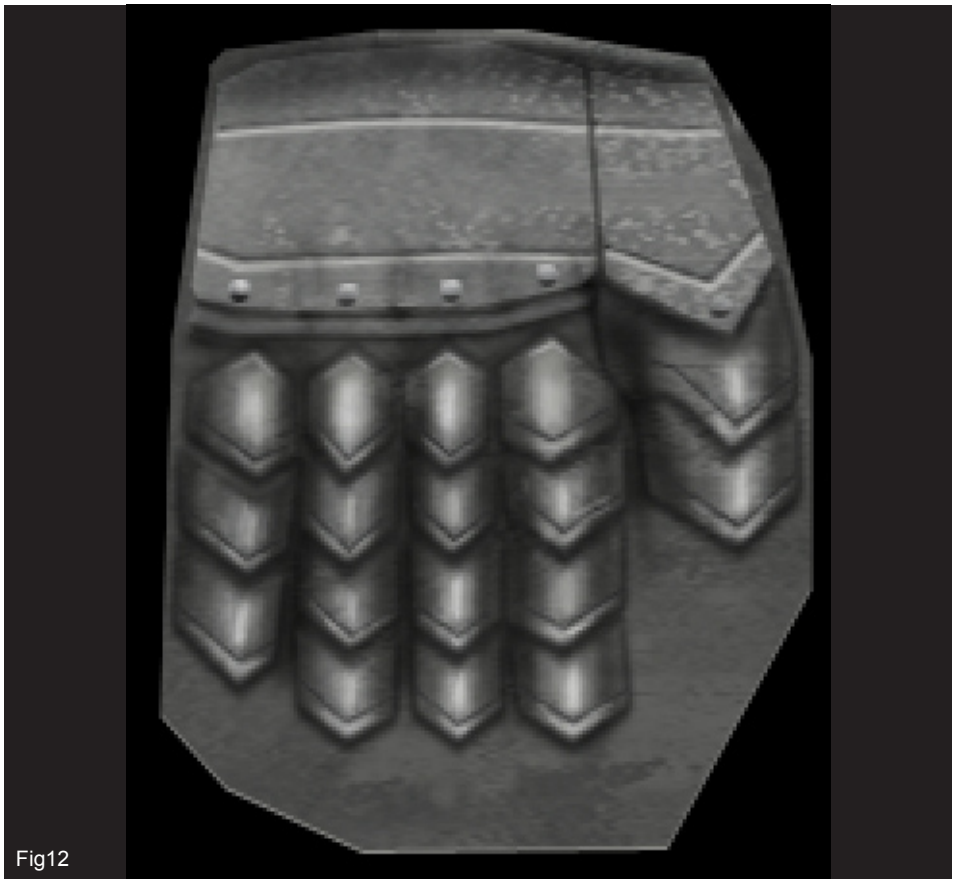
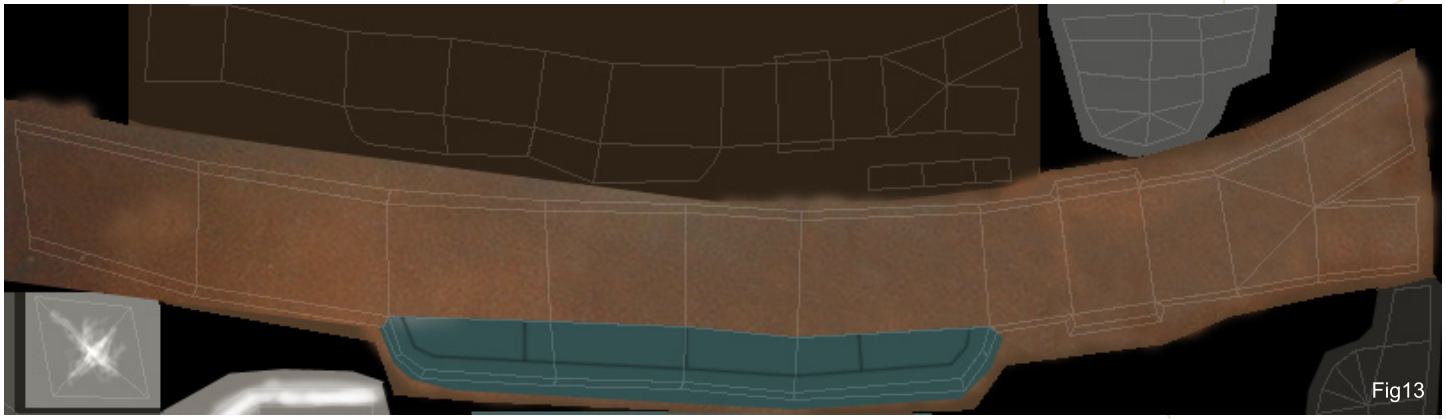


Fig12

12. Now when we overlay some more of our metal texture and some finishing touches we end up with something like Fig.12. You can see here that I have added some shadows between each finger, together with some highlights across the tops. I have also created some rivets, as before, and painted in some lines to further embellish the hand. When tackling the rest of the armour, follow these procedures and be mindful of the fact that you want there to be an ambient light source above the character.


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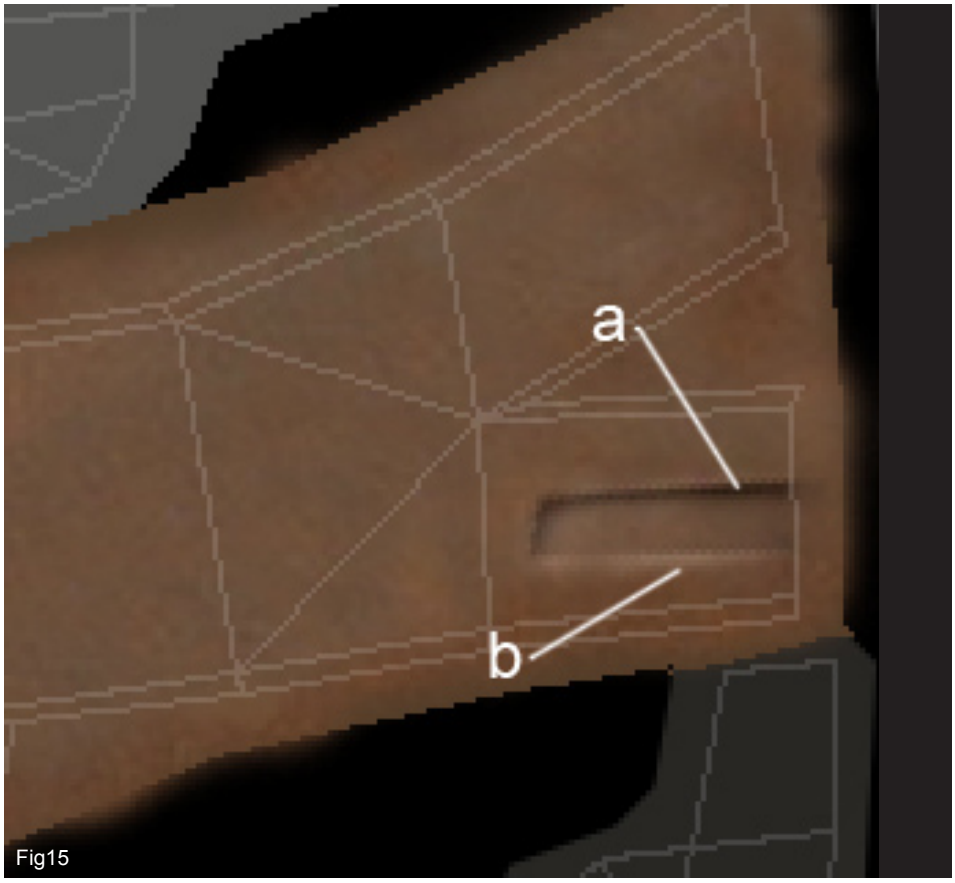
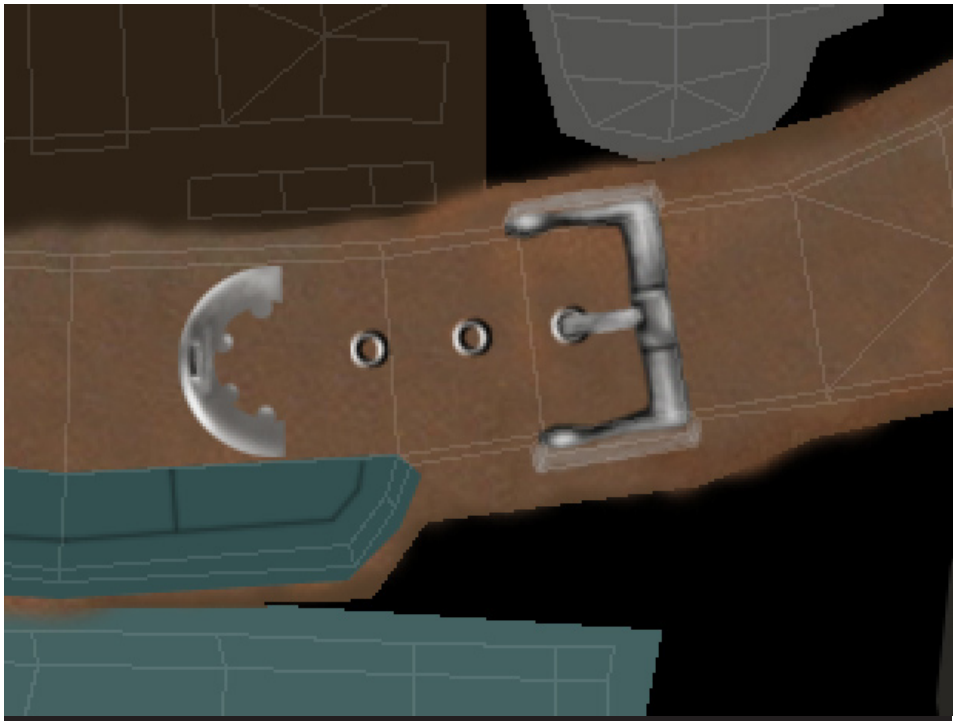
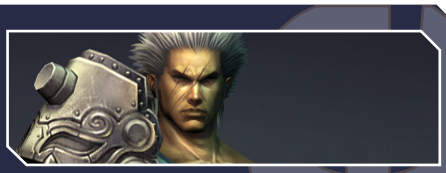


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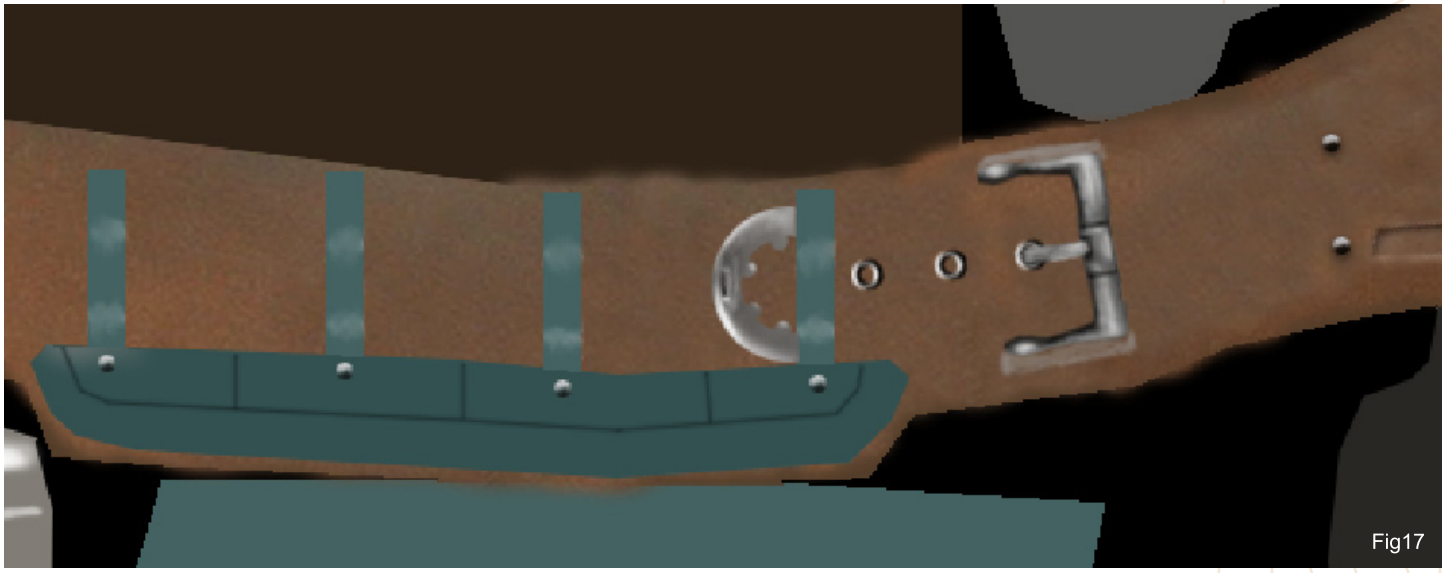


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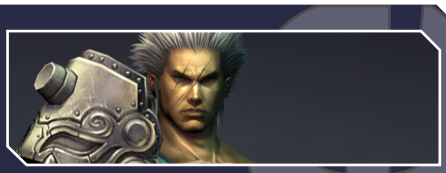
Fig18


Fig19


Fig20

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21. Now, using a shadows layer set to Multiply, start painting in the direction of some of the folds using the same colour as the trousers. Using a standard soft round airbrush they will naturally come out darker, due to the layer blending mode. Use a larger brush to begin with to get a soft edge and then reduce the size of the brush to sharpen crease lines. In Fig.21, you can see the arrows which dictate the direction of the creasing. Try and vary it slightly as there is always variety where folds are concerned.



Fig21

22. Now on the highlights layer (Set to Soft Light), simply trace around the shadows to emphasize them as well as placing a few strokes in between, as shown by the arrows in Fig.22. Bear in mind which areas will receive more direct light (in this case the outside of the leg) and focus the stronger highlights in this area. Use a colour that is almost white, but with a shade of the green, in the trousers which will help. Use a small soft brush to add crisp edges to some of the more extreme creasing down the outside of the leg. Generally, creases appear more around areas of tension such as joints - hence the detail around the groin, so keep this in mind.



Fig22

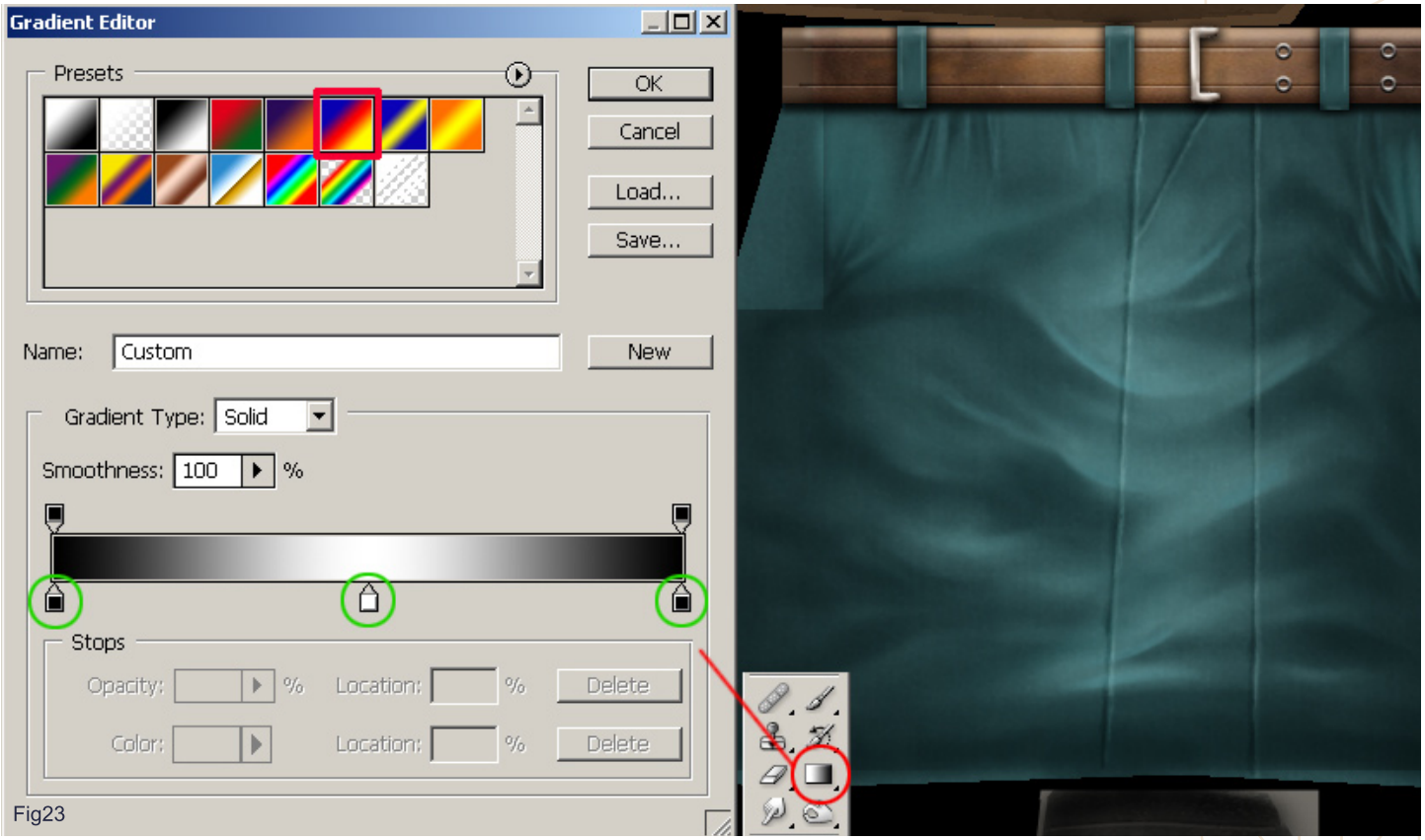


Fig23



23. One final layer to help provide some subtle shading can be added on top of the previous three. This will incorporate a Gradient which can be found on the toolbar (seen ringed in red in Fig.23). First of all, create a selection area around the wireframe containing the trousers and then click on the gradient tool. This will open up a dialogue box, similar to that on the left. Now select the preset in red along the top of the editor and proceed to click on the three tabs under the gradient bar ringed in green. Change the colours to black, white and black, as shown, and then drag a line from the left of the trousers to the right making sure that the layer mode is set to 'Multiply'. You should now see a consistent shadow down the edges of the trousers, fading away in the middle, as seen on the right. A similar approach can be used on the waist banner, except that is for the gradient. Begin with some broadly painted shadows using a Soft Round airbrush and then tighten the creases with a smaller Hard Round brush before emphasizing them with a highlights layer.

Conclusion

Once you are satisfied that you have completed each of the components on the texture, you can add a couple of finishing touches if you wish. These incorporate painting in some shadows around the clothing and armour, particularly under the shoulder piece and elbow guard. This will just emphasize the geometry and add a richer and deeper contrast to the shadows when the character is placed in a scene. You will notice that the trousers have not been unwrapped in their entirety and so it will not be possible to place a shadow under the waist belt and banner, as it would be mirrored on both sides. Ideally, you should unwrap both legs in order to solve this problem but, for the sake of saving time, I have neglected to do this. One remaining aspect you can add is some wear and tear to the clothing and armour through dirt maps. Finding a suitable image of rusted metal will provide a good base from which to extract some detail which can be colour adjusted and then overlayed.

You could use a Multiply mode to add dirt/rust, or perhaps Soft Light / Screen to add scratches. Have a go and see what you can come up with. You could also try using Layer Effects – Bevel / Emboss to add dents and create a battle hardened look. This I hope covers most of the crucial aspects of the texturing phase of the tutorial. You may find that some of the texture is stretched slightly when applied to the model, as is often the case. An alternative to changing the texture itself is to tweak the mapping within XSI to solve the issues which is usually far quicker. Simply apply an Unwrap UVW and transform the verts, as outlined in the mapping tutorial. When the texture is applied to the mesh and rendered in a simple scene, we end up with something similar to this image.



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